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Owned and Published by



**CHILTON COMPANY**  
(Incorporated)

**Publication Office**      **Editorial and Executive Offices**  
Chestnut and 56th Sts.,      239 West 39th St.,  
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Member, Audit Bureau of Circulations  
Member, Associated Business Papers  
Indexed in the Industrial Arts Index.  
Published every Thursday. Subscription Price: United States and Possessions, Mexico, Cuba, \$6.00, Canada, \$8.50; Foreign, \$12.00 a year. Single copy, 25 cents. Cable Address, "Ironage, N. Y."



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# THE IRON AGE

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APRIL 28, 1938

ESTABLISHED 1855

Vol. 141, No. 17

## *The Fable of the Sloths and the Monkeys*

○ NCE upon a time, many millions of years ago, before mankind made its troublesome appearance on earth, the animal kingdom was ruled by the system of private enterprise.

The lions and tigers and other meat eaters who took the trouble to go out and hunt their meals were able to obtain the sort of diet that they desired and needed because they were willing to work for it. The grazing animals took the occupation of providing for themselves more placidly but spend many hours each day on their feet in the pasturage. The bees and the ants worked with unceasing energy to build and maintain their colonies and to keep them stocked with food.

But in addition to these and many other classes of industrious animals there were others who did not care particularly for work. The sloths, for example, were loafers who spent hours hanging up-side-down on the limbs of trees. The monkeys, too, did not care for work but they were great playboys who took delight in minding the business of others.

The monkeys, like the sloths, spent many hours up-side-down, hanging by their tails, and it may have been this unnatural posture that induced in them the habit of seeing things just opposite to the way that they really were. Having this peculiar ability and with plenty of time on their hands to capitalize it, the monkeys evolved what was then a new philosophy known as **the doctrine of more reward for less effort.**

It did not take long for the monkeys to convert all of the sloths to their point of view, for the sloths were fond of good eating even though not anxious to bestir themselves to get it. They were willing to accept the leadership of anyone who would promise them more to eat for less effort, especially since it involved merely the trouble of casting a vote on animal election day.

The monkeys and the sloths turned out in great numbers at the ensuing election, whereas the lions, tigers, elephants, bees and ants were too busy working for their living to bother about it. Thus the century old system of private enterprise was defeated and was replaced by a "share the food" plan whereby the ambitious animals were forced to support the lazy ones. This was put into effect by a system of contribution called tax-ation.

It worked all right until the good providers came to the conclusion that they themselves would soon starve to death because of the mounting demands of the sloths and the monkeys. It was then that a wise old elephant originated the true saying: "The power to tax is the power to destroy."

The moral of this fable is that it is fatal to man or beast to permit monkey business to enter into taxation.

*Joe Vannoy*



GENERAL view of Youngstown Sheet & Tube Company's new seamless mill. No. 1 piercer is at the right, No. 2 piercer on the left. Heating furnaces are at the rear. Shows tube coming out of No. 2 piercer.

## Seamless Tube Mill Modernization

**T**HE first large seamless tube mill built in this country in seven years was put into operation recently at the Youngstown, Ohio, plant of Youngstown Sheet & Tube Co. for producing pipe ranging from 4½ to 14 in.

This new mill is part of a general development and improvement program just completed in the company's seamless pipe division, which included the installation of a new 35-in. rounds mill for rolling round pipe billets, two large "peelers" which by means of alloy steel cutters automatically "skin" steel billets to remove surface defects, two new and very large (50-ton-per-hr.) billet heating furnaces, and two new pipe piercing mills.

All the new equipment incorporates modern developments and improvements in design, and automatic control of operations is extensive. The mill has a rated capacity of 300,000 tons per year and replaces a comparatively new plant built twelve years ago.

For the new seamless mill, ingots of specially selected open hearth steel are reheated in a battery of 32 soaking pits and rolled into blooms on a recently reconditioned 40-in. blooming mill. In addition to the new rounds mill, new equipment installed in this

department included one 48-in. and two 72-in. hot saws, a 50-ton-per-hr. billet reheating furnace and the two peelers.

In making billets 5¾ in. to 13½ in. in diameter, steel from the 40-in. blooming mill is rolled into rounds on the 35-in. rounds mill. In making 3¾ in. to 5¾ in. billets, the larger rounds are brought back for further reduction. They are first allowed to cool, then are peeled, reheated in the new furnace and passed again through the rounds mill, this time to be rolled down to size suitable for finishing on a 24-in. merchant mill.

The new 35-in. rounds mill is a 2-high reversing unit with electric manipulators and a 4000 hp. main drive. The mill has been designed for quick roll change with universal couplings that can be quickly retracted and pulled away from the rolls, and wide windows that allow the rolls to be easily removed.

The two 72-in. hot saws are identical units, driven by 750-hp., 2300-volts, 514 r.p.m. motors. The billets are clamped on the entering side while the saw is fed through them by electric power. Billets up to 14 x 16 in. can be handled by these saws.

The two peelers which take the

large rounds after cooling on the cooling beds remove the light surface cracks which heretofore were chipped out or scarfed by hand and expose the deep defects which show up as black marks against the bright surface of the newly cut metal. In this way all exploratory chipping to find deep defects is eliminated.

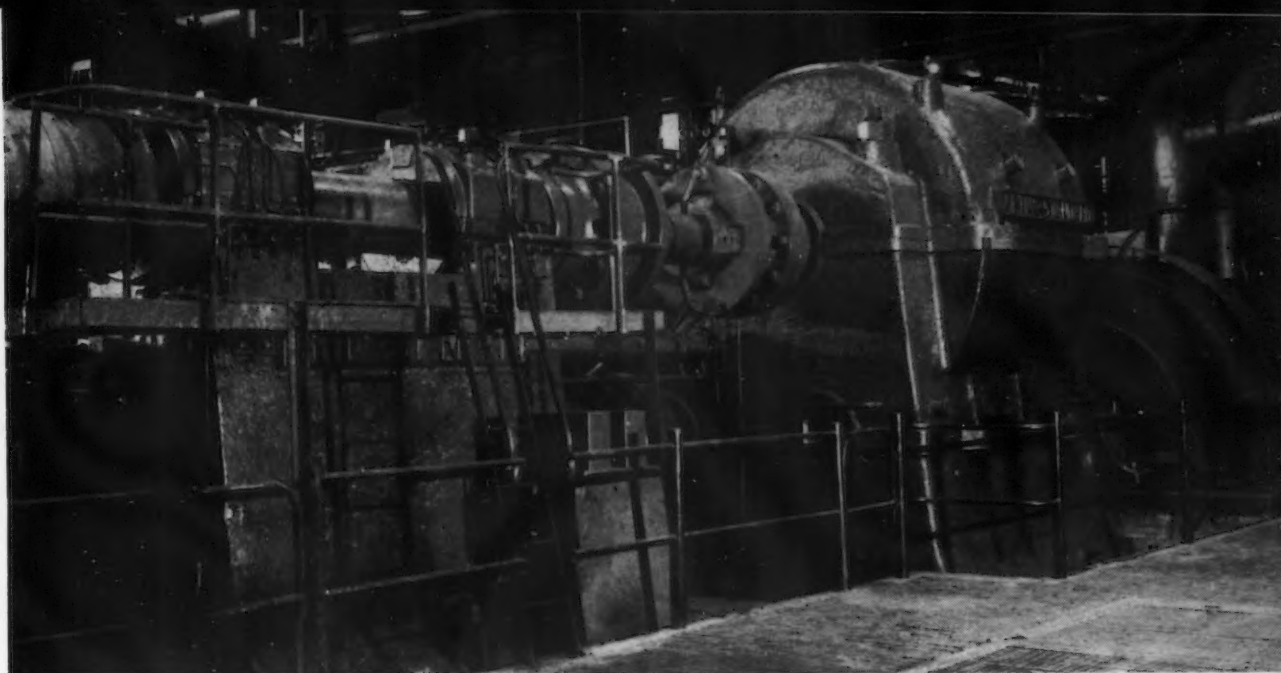
The two peelers are identical units with a capacity of approximately 1000 tons per day each. The rounds are fed to the peeler by an entry carriage that clamps the back end of the round. An electrical drive in the carriage moves the round forward into the revolving cutters. After the billet has proceeded through the cutters to about half its length another gripper carriage on the discharge side of the machine moves up and pulls the round through. The clamping cylinders of both carriages are air operated.

About ¼ in. of the metal is removed by the cutter head. Each unit consists of six hard alloy steel cutters fixed in a revolving jib. The main cutter heads are driven by 250-hp., 6 to 40-r.p.m. motors.

In the steel yard at the piercing mill the rounds are loaded on two 22 x 36-ft. loading docks, one in each bay of the building, and sent by roller

AL view of  
Youngstown  
Tube Com-  
new seam-  
ll. No. 1  
is at the  
p. 2 piercer  
ft. Heating  
are at the  
ows tube  
out of No.  
piercer.

VIEW of piercing  
mill, showing  
spindle drive, dum-  
my stand, and mo-  
tor at extreme right.



# on At Youngstown

By D. R. JAMES

Cleveland Editor, *The Iron Age*

conveyor to the billet reheating fur-  
naces, which are continuous furnaces  
of the "walking beam" type. The fur-  
naces are 25 ft. wide and 80 ft. long,  
the largest of their kind ever built.  
Each furnace has a capacity of 50  
tons per hr.

The major portion of the steel is  
charged in the furnaces in double  
rows. Since most steel lengths fall  
between 8½ and 11 ft., the 25-ft.  
width of the double row furnaces  
makes for maximum coverage of the  
hearth. A very small percentage of  
the billets which are less than 8½ ft.  
long are made and fired double length  
and later cut in two. Steel up to 19½  
ft. lengths can be charged into the  
furnace in single rows.

Each furnace has two heating  
zones, a primary zone 60 ft. long and  
and a soaking zone 20 ft. long. In the  
primary zone, billets rest on skids of  
seamless water pipe fed by one of  
three possible water supply systems  
to prevent any failure. The billets  
are moved through this zone by four  
huge "walking" beams 60 ft. long.  
Two of these beams lift up the entire  
charge of billets in each row, move  
them forward and set them down  
again. This repeated action moves the  
billets through the furnace.

In the primary, walking-beam zone,  
billets are fired both above and below  
the pass line. Firing of billets from  
both above and below provides a uni-  
form temperature which is of vital  
importance in making first quality  
pipe.

In the 20-ft. soaking zone, billets  
are rolled on an inclined special re-  
fractory bottom where the heating to  
rolling temperature is completed and  
an absolutely uniform heat within the  
steel is assured. In this zone billets  
are fired above the hearth level only.  
The temperature in the furnaces is  
precisely controlled by automatic pres-  
sure controls and controls which regu-  
late the air and gas ratio. Reheated  
billets discharged from the furnaces  
are sent to the piercing mills by a  
fast roller conveyor.

The two piercing mills which pierce  
the solid billets and roll them into  
rough tubes are given extreme soli-  
darity, stability and freedom from  
vibration. Heavy main castings and  
the extensive use of roller bearings  
are notable features of these mills.  
With other improvements that make  
for increased speed and greater accu-  
racy, operators can work to closer  
tolerances. The main housings are  
very heavy, weighing 119 tons each.

The two piercing mills are identical  
units. They are powered on the enter-  
ing side by 5000-hp., 360-r.p.m. syn-  
chronous motors and have double re-  
duction drives of pinion and single  
helical gears. Spindles are 16 in. in  
diameter.

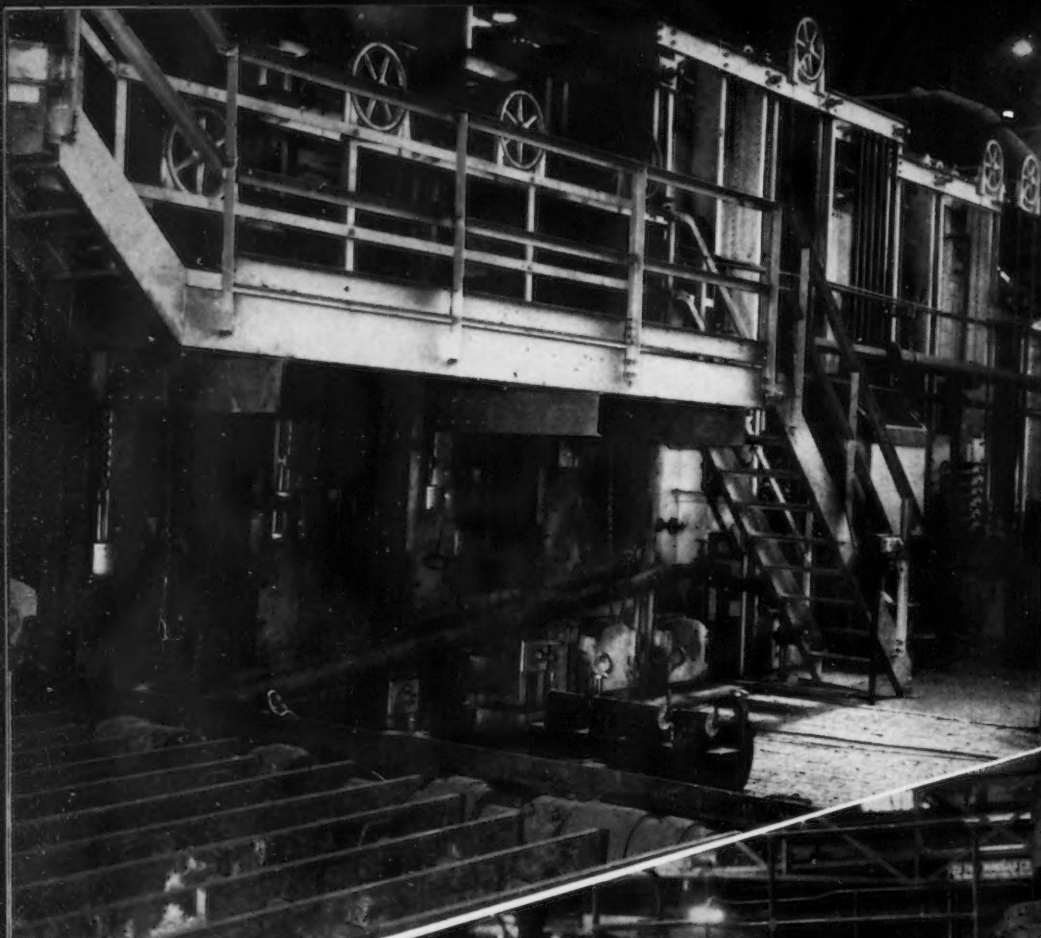
Between the drive spindles and the  
drives are shear spindles and univer-  
sal joints supported by a dummy  
stand for each unit. The shear spin-  
dles are each 5 ft. 10 in. long. All  
drive machinery is equipped with  
roller bearings. So, too, are the mill  
rolls proper.

Construction and rolling principles  
used in modern continuous strip mills  
have been applied in the design of the  
piercing mills. The roll face is dif-  
ferent from the conventional piercing  
mill, permitting a different distribu-  
tion of the actual working of the steel  
to give a better product than that made  
on other type mills.

Feed angle of the rolls, which gov-  
erns the speed with which the billet is  
drawn through the mill, is adjustable  
to from 5 deg. to 12 deg. in either  
mill. The roll adjustment is motor  
driven through a typical worm gear  
drive.

Both inlets and outlets are longer  
than those on other mills, to permit



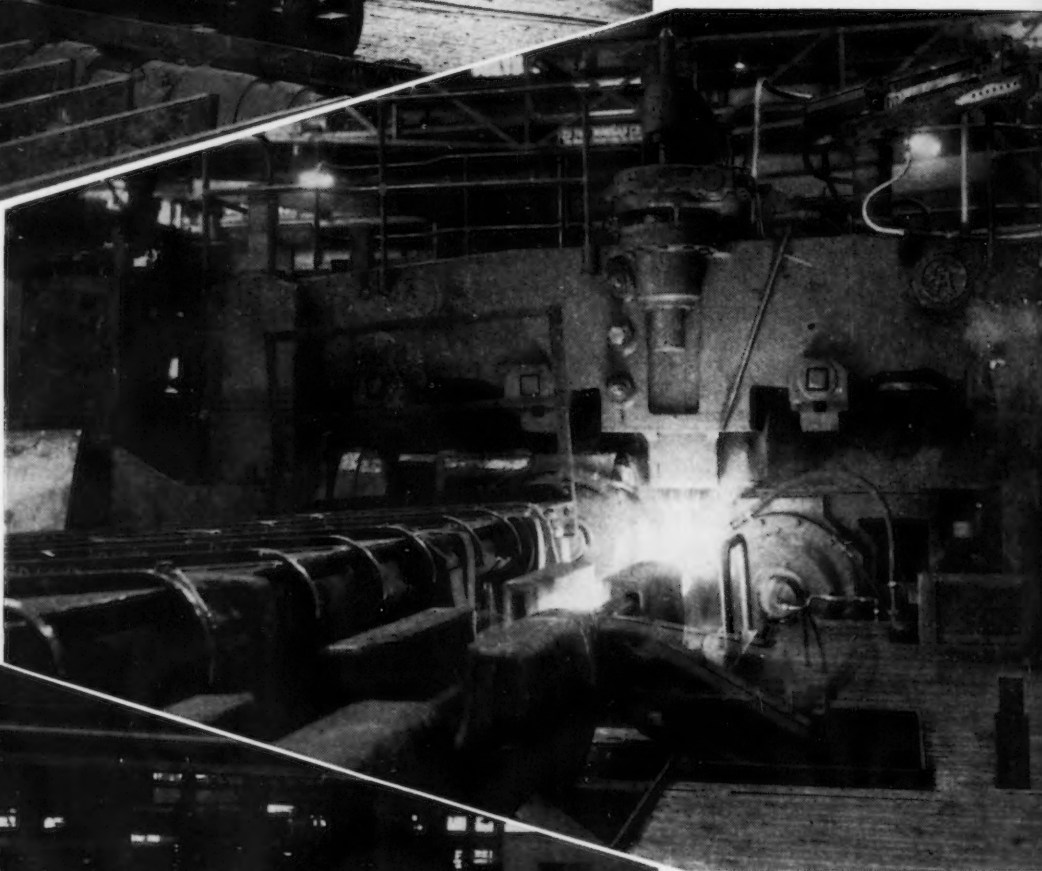


o o o

AT LEFT

**D**ELIVERY end of one of the two new 50-ton-per-hour billet heating furnaces at the Youngstown plant of Youngstown Sheet & Tube Co.

o o o



o o o  
BELOW  
**S**EAMLESS pipe on the cooling table at Youngstown.

o o o



o o o

ABOVE

**C**LOSEUP view of outlet table of No. 1 piercer at Youngstown. This is where the solid blank is pierced. Note outlet trough for piercing bar in foreground.

o o o

the piercing of maximum lengths. This also reduces to a minimum the amount of work to be done in the high mill where the tubes are further rolled out and given a uniform wall of desired thickness. Inlet troughs are water cooled and slotted to take care of the scale. They are adjustable with hydraulic jacks.

Kick-off mechanisms, which lift the billets and tubes out of the various troughs on to conveyor tables, are all double-throw. The double kick-off arms, which come up and make half

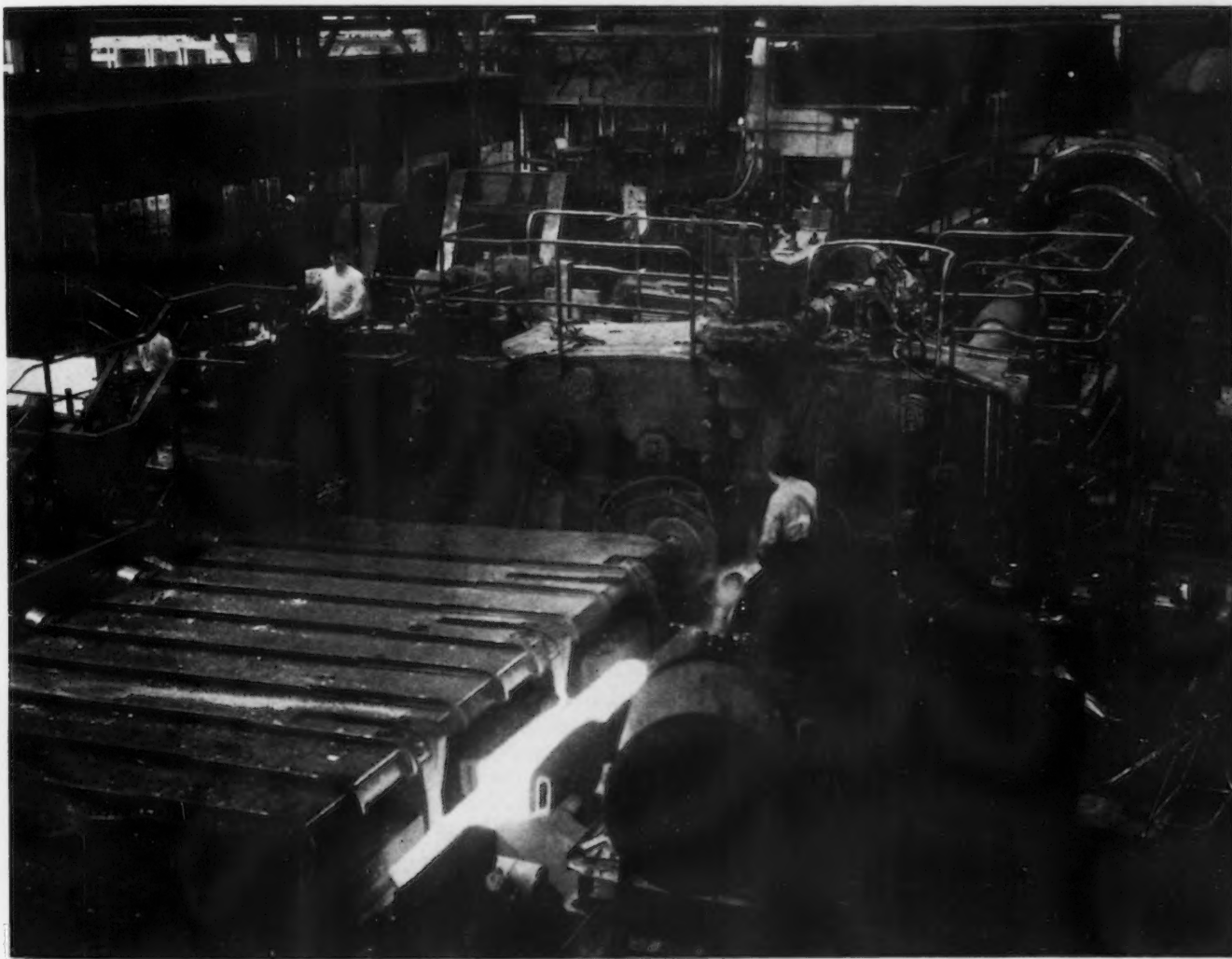
ward and reverse directions. The slow-downs and stops are adjustable to three positions to accommodate the different length shells made.

Piercing mill bars are of special alloy composition and have been fitted with special spherical type heads of Sheet & Tube development, which will prevent excessive whip on the bar and excessive wear on the thrust block. Bars are water cooled and the water pipe is equipped with a bearing-type coupling to prevent breakage from twisting.

able parts are automatically lubricated, the furnaces and mills being equipped with central greasing and individual oil circulating systems.

In the event of failure in the lubrication or water systems, sirens on the operating platforms would signal the mill. Selsyn controls permit the cooling table operators to signal the men at any other unit, should any other difficulty develop or any defect appear on the pipe.

The length of every section of pipe is automatically recorded at the cool-



**P**IERCED tube, which has left No. 1 piercing mill, is in this photo about to be lifted on to conveying table to be taken to No. 2 piercing mill.

o o o

a revolution with each operation, continue around, always in the same direction. This cuts the displacement time in half and speeds up operations, since it is no longer necessary to wait for the kick-off arms to return to their original position before feeding bars into the trough. The kick-off arms are designed to be easily removed to accommodate different length shells.

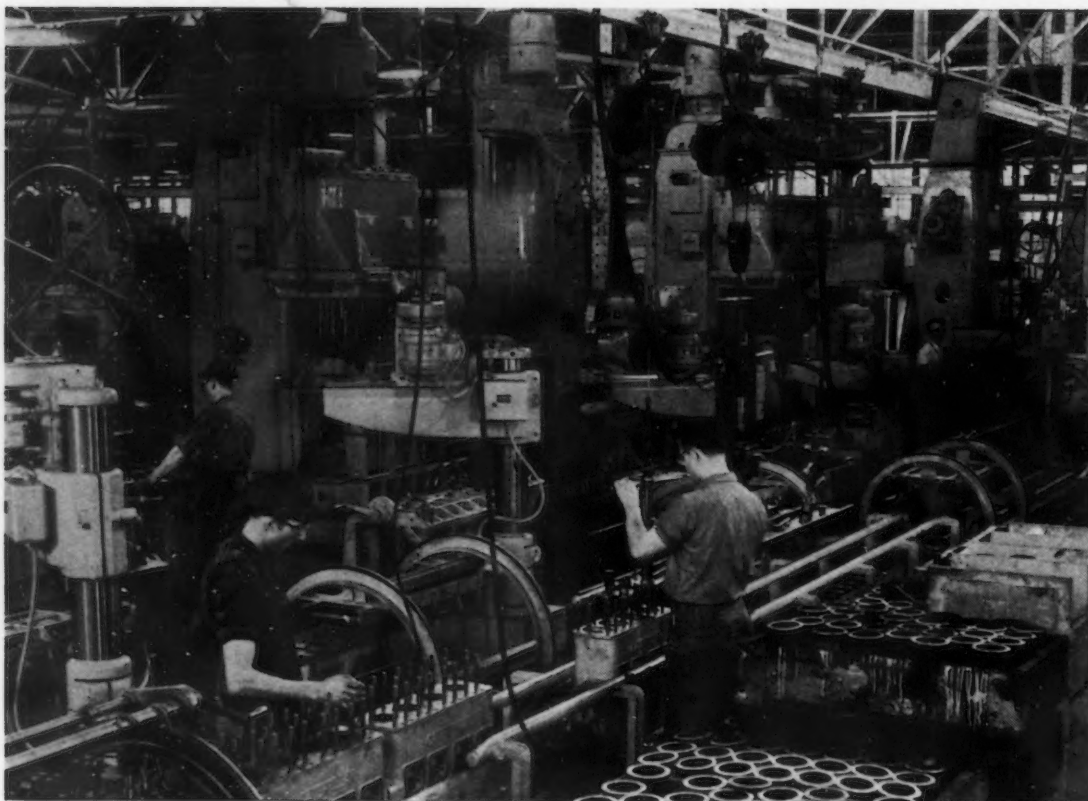
Piercing mill bars are electric driven and equipped with automatic slow-downs and stops in both for-

In making small size tubes, the long piercing bar has a tendency to sag in the middle. To eliminate this sag, special carriers are provided to support the bars. They are synchronized with the bar drive and work automatically.

All main bearings, ways and mov-

ing table. By means of Selsyn controls this measured length is also transmitted to an indicator in front of the roller at the high mill, permitting him to check the foot-weight of the pipe.

Pipe made to specifications requiring normalizing is normalized in a new two-zone walking-beam normalizing furnace. This furnace is wide enough to handle 50 ft. lengths. It is 45 ft. long and has a capacity of 50 tons per hr.



GENERAL view of cylinder block machining line. Final ream is being given cylinder liner bore in center.

## Machining Diesel Cylinder

**E**QUIPMENT has been installed in the plant of the Caterpillar Tractor Co., Peoria, Ill., which is capable of completely machining 160-3 $\frac{3}{4}$  in. x 5 in. cylinder diesel engine blocks every 24 hours.

Placed in operation early in February, this project is one of a number of improvements, and embodies many special designs and new ideas.

A feature of "Caterpillar's" tractor-building procedure is the emphasis placed upon flexibility in all units, such as the cylinder block machinery, assembly lines, etc. Because of the company's diverse production of tractor models, it has been necessary to design most of the machining and assembly equipment with convertible features so that at a moment's notice changeovers from work on one type engine or chassis to another may be made.

The first machining operation con-

sists of milling the top, bottom and straight side of the block, this being accomplished at one end of a special two-station milling machine. The other station of this machine mills both ends of the block. Designed especially for this purpose by the company working with the builders, this mill features a quick-acting hydraulic quill adjustment operated by valve control. The two ends of the machine are at either extremity of a table upon which is located convertible holding fixtures.

The casting, which requires two milling operations at this point, is milled first at one end of the machine and then transferred to the other fixture and completed. No time is lost since one fixture is unloaded and loaded while the casting in the other fixture is being milled.

At the conclusion of these two milling operations, a jib crane and air hoist lift the block to a radial where the locating dowel hole in the pan face

is drilled and reamed. The hoist chain is equipped with a double end hook so that the block may be turned over while in transit. From the radial drill a monorail conveyor is pressed into service to transport the block to the second milling machine, where the main bearing locks and sides of the main bearings are milled.

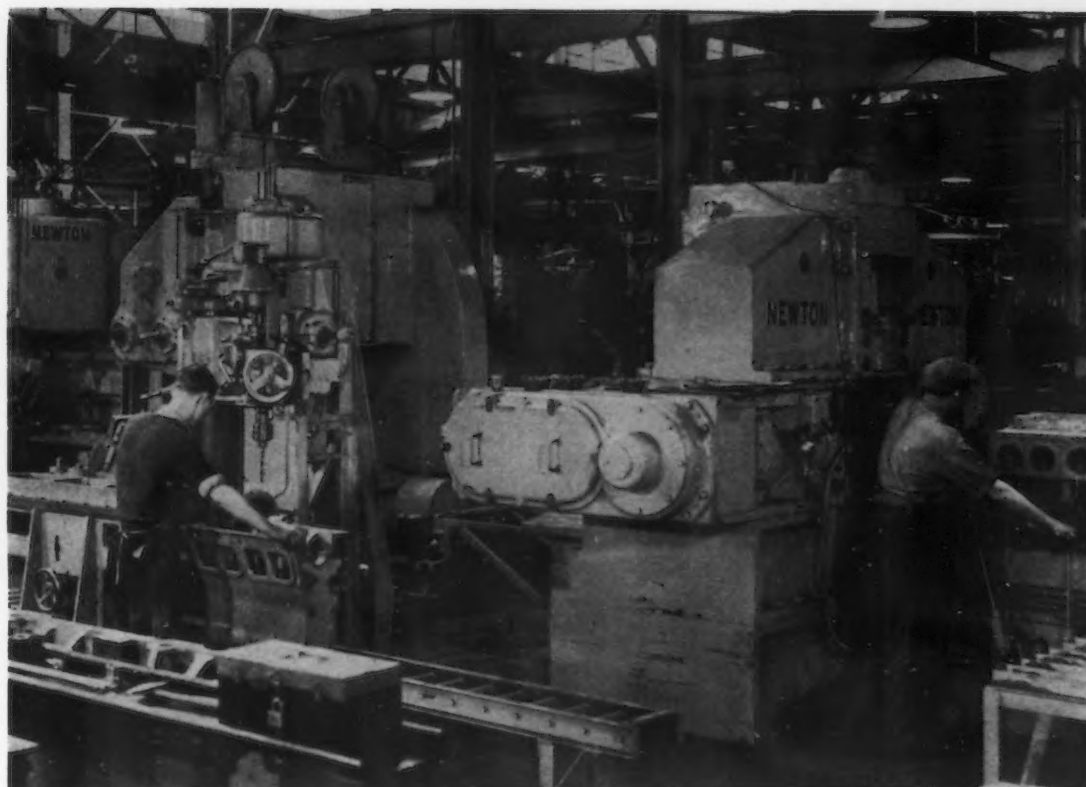
This mill is also a double end machine. At the first station, the bearing locks are milled and an angular disappearing spindle mills the hand hole plate bosses on the angular block side. At the second position, the ends of the main bearings are straddle milled. In case the size of the block should at any time be changed, two complete rise and fall horizontal arbor setups with gang cutters are provided. A trip control causes the casting to stop beneath either set of cutters.

Both mills are equipped with "Uni-box" heads, and may be modified or rebuilt to suit almost any purpose that



w of  
lock  
Final  
given  
bore

ALL finished surface milling is done by these Newton machines. Cincinnati radial in foreground drills and reams locating holes.



## Blocks at Caterpillar . . .

will fit within the general limits of the machine and holding fixtures. The advantage of this type head lies in its ability to be placed in any position, either flat, on its side, or mounted on a column, thus affording great flexibility of design.

A boring machine equipped with five spindles bores the cylinder liner bores at the next operation. An unusual feature of this machine is that the base and holding fixture are one and the same, a roller conveyor moving through the case and transporting the castings from front to back of the machine, which is equipped with two rows of spindles. The two blocks are moved under the spindles and two cylinders are bored, after which the castings are moved on through the machine until the unbored cylinders of the two blocks are under the proper spindles, and the procedure is repeated.

An hydraulic elevating device takes charge of the blocks at this point and

they are raised to the level of a three-way drilling and tapping machine, which includes vertical, side angular and rear horizontal heads.

This machine drills 10 holes, core drills four holes and combination drills and counter-drills 13 holes at the top of the block; drills 11 holes at the rear end of the block, and 15 holes at the angular side.

A roller conveyor table connects this machine to a second drilling machine which contains a horizontal and vertical head, and drills 25 holes on the top of the block, and 12 on the straight side.

Another three-way drilling machine takes up the work here. Arranged with vertical, side and rear horizontal heads this machine drills 33 holes and combination drills and counter-bores four holes at the bottom of the block, drills 25 holes at the straight side, and 17 holes at the front end of the block.

The last of the drilling is completed

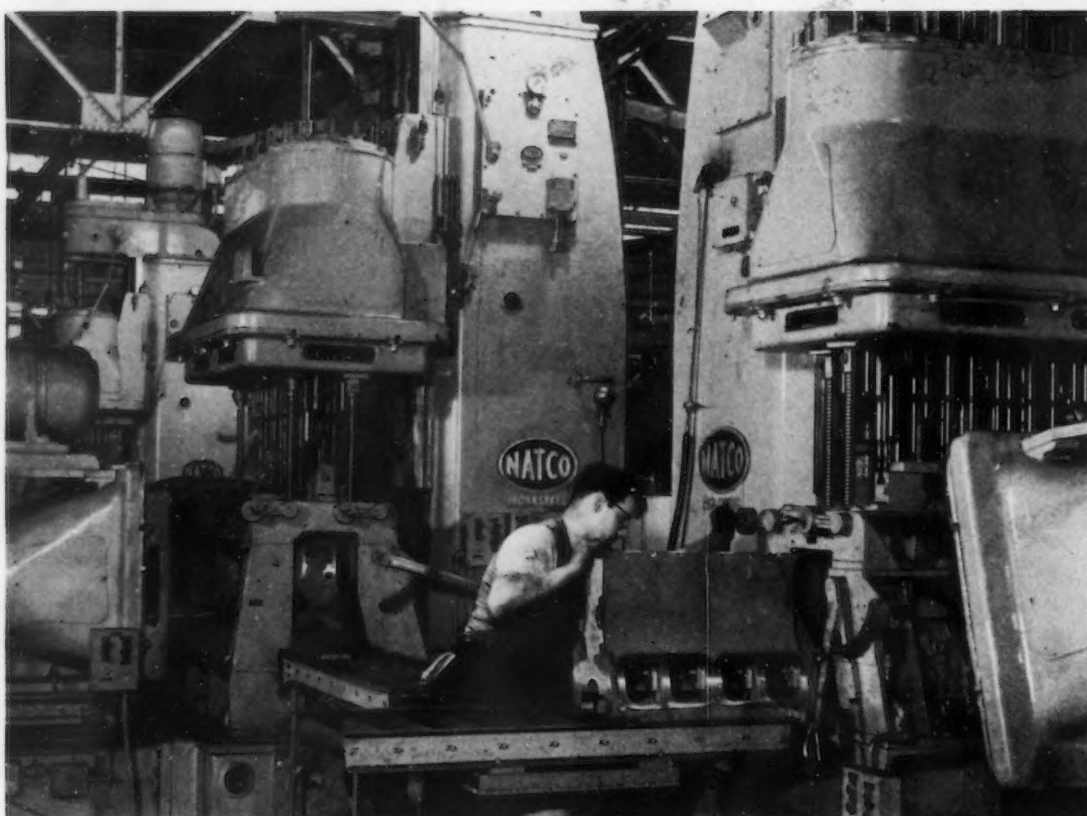
by a fourth drilling machine equipped with a standard adjustable joint drive head, which counter-bores six holes, reams five, and drills eight holes.

All the drilling machines are connected by roller conveyor tables.

The pump shaft hole is finished by a standard heavy duty head with single spindle drill mounted on a special base which is in combination with the holding fixture.

A line of radials are the next machines through which the engine blocks are moved. They consist of standard equipment with the exception of the elimination of the regular bases and the mounting of the radial column directly on the holding fixture.

The operations performed by these radials are as follows: Tap all pan face holes, ream dowel holes and tap stud holes on straight side; ream top dowel holes and tap cylinder head stud holes; ream dowel holes at the fly-wheel end of the block and tap stud



THREE of the four Natco drilling machines are shown here.

holes; ream and tap dowel and stud holes at the timing gear housing end of the block; ream bottom dowel holes and tap balance of pan face holes.

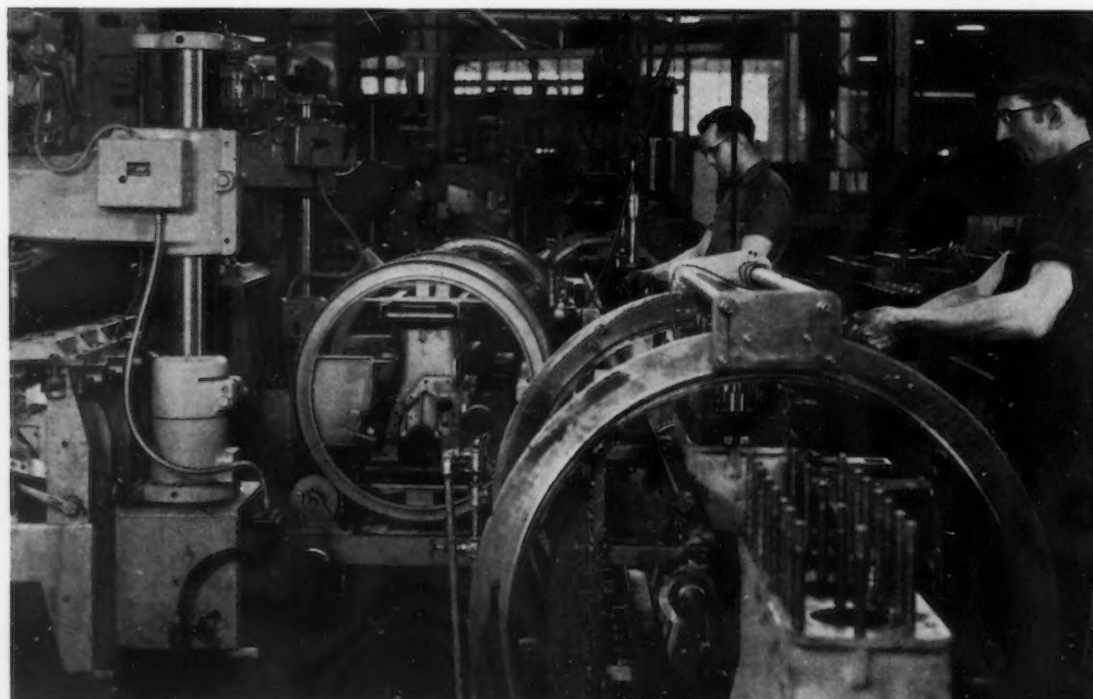
Two of the radial machines incorporate in the holding fixture an hydraulic roll-over device so that both top and bottom of the block may be worked on

in the one machine, and so that it may be delivered to the next operation in the proper position.

After leaving the last of the radials, the blocks pass on a conveyor table through a washer where a kerosene bath is given every inch of the castings by pressure spraying.

Leaving the bath, the main bearing studs and caps are assembled, and a special boring machine rough bores the crankshaft and camshaft bearings, and another finish bores immediately afterward. A second washer is encountered here, this time an alkaline

(CONTINUED ON PAGE 64)



BEHIND the roll-over device in the foreground, a fixture for testing water jackets is being tightened. Radial drills shown at left.

# Their Dutch Is Up

By JAMES A. ROWAN  
*News Editor, The Iron Age*

WHEN the Moravians who founded the little town of Bethlehem, Pa., came to the question of city planning they decided that, first, they must have a house for the "married brethern and sisters" of the colony.

Next to obtain a dwelling place of their own, as quickly as a roof could be raised in the fertile fields of eastern Pennsylvania, were the "single sisters" and last, although perhaps most important of all, was a house for the colony's bachelors, then known as "single brethern."

Nowhere in early pictures or early history of the town along the Lekka river, now the Lehigh river, is there any mention of a headquarters for a labor union such as John L. Lewis' Steel Workers Organizing Committee and the Amalgamated Association of Iron, Steel & Tin Workers.

## Depend on Hex Signs

The union headquarters, like many other things, came to Bethlehem later, in the summer of 1936, and when it came the descendants of the Moravians—sometimes one of the groups called "Pennsylvania Dutch"—who work in the Bethlehem plant of the Bethlehem Steel Co. looked on with annoyance.

Some of the older Moravian folk from the surrounding hills depended on the hex signs on their red barns to chase away these worldly union organizers who were seeking to collect \$1 a month in dues for representing Bethlehem workmen in bargaining col-

lectively with that steel company's management.

In trying to chisel dollar bills from the descendants of the Moravians, who are said to have stemmed from the immortal martyr John Huss, the SWOC organizers had indifferent luck and some of their reports to SWOC headquarters back in Pittsburgh might have been paraphrased:

"Boys, their Dutch is up."

But the Moravians, who are few in number, found themselves lined up with thousands of other workmen who, in the strictest ethnological sense are not Dutch but who, nevertheless, find their "Dutch" rising on occasion.

## A Labor Board Baby

An inquiry into the labor situation at Bethlehem, starting with the Moravians, discloses several significant things which possibly will be made known as the National Labor Board hearings on the Bethlehem Steel Co. labor case progress.

One of these significant discoveries concerns the origin of the Bethlehem Employee Representation Plan of collective bargaining, the model used in the building of most of the so-called "company unions" which the Labor Board-SWOC forces are trying to displace with their own brand of collective bargaining agency.

A United States Government agency "imposed" the Employee Representation Plan upon the steel industry. It wasn't "imposed" upon the nation's steel workers by the steel companies,

as so frequently charged by organized labor and its friends.

## Sired by the U. S.

For all who care to dig into the question, there is definite proof that the National War Labor Board, set up to prevent labor disputes from interfering with the tremendous movement of munitions and other war supplies from the United States to its allies in the World War, actually sired the Plan of Employee Representation.

THE War Labor Board ordered Bethlehem Steel Co. "to set up a collective bargaining system or else."

The War Labor Board itself set up a plan of shop representation which it ordered the steel company, then working on large government munitions orders, to adopt.

Finally, the National War Labor approved its own plan of employee representation then established at Bethlehem Steel's Bethlehem plant and later set up at nearly all steel plants in the country except a few which already had their own collective bargaining machinery.

## How the Plan Began

Other official government agencies approved the Employee Representation Plan but nowhere is there more sensational information regarding development of the much reviled "company union" than in the record of the National War Labor Board itself. On July 31, 1918, William H. Taft and Frank P. Walsh, joint War Labor Board chairmen, and W. Jett Lauck,



board secretary signed a significant statement which said, in part:

"The case of the machinists and electrical workers versus Bethlehem Steel Co. is of unquestionable importance from the standpoint of the war. It appears beyond doubt that the dissatisfaction among the employees of the company has had and is having a seriously detrimental effect upon the production of war materials absolutely necessary to the success of the American Expeditionary Forces.

"The main cause of the dissatisfaction is a bonus system so complicated and difficult to understand that almost one half of the time of the hearings was consumed in efforts to secure a clear idea of the system.

#### **Must Have Bargaining Right**

"The absence of any method of collective bargaining between the management and the employees is another serious cause of unrest as is also the lack of a basic guaranteed minimum wage rate.

"The right of committees to bargain collectively is recognized by the National War Labor Board. Therefore, the employees of the Bethlehem plant should be guaranteed this right. The workers of the Bethlehem plant should use the same method of electing committees as is provided in the award of the National War Labor Board for the workers of a General Electric Co. plant at Pittsfield, Mass."

How Bethlehem Steel Co. officials reacted to this demand of a Federal Government agency that a plan of collective bargaining be established in their plants is shown in the following letter from Eugene G. Grace, Bethlehem president, to the Labor Board, dated as of Sept. 13, 1918:

"We are now ready to provide for collective bargaining and labor representation by an agreement in accordance with the declared principles of your Board, the details of which I have been over with Examiner Chaney. We are ready for the first election and so that there may be no doubt as to their fairness we prefer to have them supervised under your authority and direction."

**S**PEEDED by Mr. Grace's acceptance of the Government proposal that a plan of collective bargaining be set up, action in the Bethlehem labor situation came quickly and on Oct. 9, 1918, the National War Labor Board, represented by John A. Henderson, examiner in charge, issued the following notice:

"To the men and women of the Bethlehem Steel Co.

"On Aug. 1, 1918, the National War Labor Board handed down its decision in the case of the employees of the local plant of the Bethlehem Steel Co. The decision expressed the provision that all conditions of the award shall be in effect as of the above date. Representatives of the War Labor Board are now in Bethlehem under instructions to put the award in effect. This will be done at the earliest possible date.

"The task is a large one and necessarily will take considerable time. Wholehearted cooperation by both company and workers will make the task easier and secure the results desired. We are assured that such cooperation will be given by both sides.

#### **What Agreement Provided**

"The sections of the award which by its acceptance by the company becomes an agreement between the company and the employees are as follows:

"1—To give the employees a direct voice in determining their working conditions.

"2—To provide a method of mutual bargaining between the company and the chosen representatives of shop and craft groups.

"3—To provide ready means for conference between employees and management on all matters affecting common interest.

"4—To provide an agency for the prompt adjustment of differences that may arise between the employees and the management, either groups or individuals.

"5—To furnish an agency for working out the classification of employees, hourly wage and piece work rates and entire revision or elimination of the personal bonus system.

The War Labor Board empowered its examiners to investigate all charges of discrimination and to hear any differences arising between the company and its employees in the interpretation of the agreement.

#### **Outlined Method of Voting**

Then the Board outlined the method by which the Bethlehem employees elections were to be held, establishing precedents which another Federal agency, the present National Relations Labor Board, has long been trying to abolish. Said the War Labor Board:

"The important task in hand is the election of the persons who shall represent the various shops in the work of carrying out the award.

"The elections and counting of the ballots will be under the sole supervision of the War Labor Board's representatives, assisted by shop representatives selected by them.

"It is the judgment of the War Labor Board that the most practical plan is to hold the elections in the shops. For this purpose voting booths will be located in convenient locations and boxes supplied in which to deposit the ballots. The electricians and machine shop groups will be taken care of first.

"If readjustments to provide representation for some of the craft groups not taken care of in the election are necessary this can be arranged later.

"This election means much to the future welfare of the workers in the Bethlehem plant. The general participation by them in the election is necessary to secure proper results. To this end we ask for the cooperation of every qualified voter. The detailed method of conducting the elections will be explained in later bulletins or by notices posted in the shops."

**F**INALLY on May 1, 1919, two Bethlehem officials signed the plan of collective bargaining with representatives of employees at the Bethlehem plant. One hundred and twenty-three employees signed the agreement which said in part:

"Committeemen elected under the supervision of the National War Labor Board in the recent elections shall serve as members of the General Committee and shall serve for a term of one year from time of elections and until elections are held and successors elected.

"There shall be one committeeman from each department for the first hundred employees or major fraction thereof and one additional committeeman for each additional one hundred or fraction thereof.

"In departments with vacancies at present or where the number of committeemen are less than the basis of representation as noted above, arrangements shall be made immediately by the General Committee in conference with representatives of the company for the holding of elections to fill this vacancy, said elections to be supervised by representatives elected by the General Committee with the cooperation of the company as provided for in detail. . . .

#### **Qualifications Specified**

"Committeemen who have been in conference with the officials of the

company on the award handed down by the War Labor Board or who have appeared before the War Labor Board in behalf of employees of this case shall be recognized as members of the General Committee."

The plan suggested and approved by the War Labor Board then goes on to outline qualifications for committeemen, giving the right to vote and to set up election machinery to all employees on the payroll for at least 60 days prior to the nominating date.

#### Not Field for Legislation

Here the searcher after facts on the origin and growth of the Plan of Employee Representation in the steel industry finds various interesting avenues of information which would, if followed up, give the present National Labor Relations Board food for thought in its study of the Bethlehem and other Plans of Employee Representation.

No less a weighty document than the

The conference also found that "joint organizations of management and employees where undertaken with sincerity and good will has a record of success with the general principles covering such organizations stated in the Department of Labor report under the heading 'Employee Representation.'"

Concluding what in 1938 would be perhaps a statement of radical doctrine and unmindful of a future which would see the adoption of the contro-

<p><b>PLAN OF EMPLOYEES' REPRESENTATION</b></p> <p><b>AT THE</b></p> <p><b>CAMBRIA PLANT</b></p> <p><b>OF</b></p> <p><b>BETHLEHEM STEEL COMPANY</b></p> <hr style="width: 20%; margin: 10px auto;"/> <p><b>ELECTION BALLOT</b></p> <p><b>FOR</b></p> <p><b>EMPLOYEES' REPRESENTATIVES</b></p> <p><b>DISTRICT No. 35</b></p> <p><b>MARCH 15, 16, 17, 18, 1938</b></p> <p><b>NOTICE TO VOTERS:</b></p> <p>By using this ballot the voter approves the holding of the Nominations and Election as stated in the posted notice of this Election issued by the Employees' Committee on Rules under the Plan of Employees' Representation at this Plant and expresses the desire to be represented for collective bargaining and the other purposes stated in the notice by Employees' Representatives elected under the Plan.</p> <p><b>DIRECTIONS TO VOTERS:</b></p> <p>Place cross (X) opposite the names of the Nominated Candidates whom you wish to serve you as Representatives from this Voting Division.</p>	<p><b>VOTE FOR 3</b></p> <p><b>If More Are Voted For, the Ballot Shall Be Void</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">NOMINATED CANDIDATES</th> <th style="width: 40%;">PLACE X BELOW</th> </tr> </thead> <tbody> <tr> <td>CLARE H. WILLIAMS, BJ-170</td> <td></td> </tr> <tr> <td>ALEX A. AMANN, BJ-311</td> <td></td> </tr> <tr> <td>JULIUS KISH, BJ-190</td> <td></td> </tr> <tr> <td>PAUL W. HAYDUK, JR. BJ-38</td> <td></td> </tr> <tr> <td>FRANK L. KUNKLE, BJ-359</td> <td></td> </tr> <tr> <td>LOUIS R. BELZ, BJ-55</td> <td></td> </tr> <tr> <td> </td> <td></td> </tr> <tr> <td> </td> <td></td> </tr> </tbody> </table> <p><b>DO NOT SIGN YOUR NAME</b></p>	NOMINATED CANDIDATES	PLACE X BELOW	CLARE H. WILLIAMS, BJ-170		ALEX A. AMANN, BJ-311		JULIUS KISH, BJ-190		PAUL W. HAYDUK, JR. BJ-38		FRANK L. KUNKLE, BJ-359		LOUIS R. BELZ, BJ-55					
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**ALMOST 50,000** out of 53,325 workers eligible to vote in the recent election held under the Bethlehem Steel Co. Plan of Employee Representation filled in and cast ballots like that reproduced above. By voting for a fellow worker to represent him in collective bargaining each employee also indorsed the Employees' Representation Plan.

It provides in detail the steps through which an unsettled grievance must be carried, starting with the foreman and, in the case of discrimination, ending with the Secretary of the United States Department of Labor, and stipulates that the company "may designate a representative to check the qualifications of voters, the counting of the ballots and to certify as to the validity of the election."

U. S. Department of Labor report for 1920 tells of an industrial conference called by President Wilson on Dec. 1, 1919, which recommended a plan of machinery to adjust disputes in general industry by "conference, consultation, inquiry and arbitration."

**A**MONG the causes of industrial unrest listed by the conference was "social, revolutionary theories imported from Europe."

versal Wagner Labor Relations Act, President Wilson's Industrial Conference said that collective bargaining is "not a field for legislation because the form which employee representation should take may vary in every plant." The conference commented that:

"Employee representation has been discussed under different names and forms such as shop committees, shop councils, workers' councils, representa-

# Ten Years of Steel

By MYRON C. TAYLOR

**EDITOR'S NOTE**—In two earlier installments of "Ten Years of Steel," written by Myron C. Taylor prior to his retirement April 4 as chairman of United States Steel Corp., the reorganization of the corporation's physical properties, finances and personnel since 1928 has been graphically portrayed. In this week's installment, "Ten Years of Steel," the retired executive tells how the company earns its living and distributes its income.

"None of the goals as set have yet been reached," writes Mr. Taylor. "But the weight of the evidence—the record to date—is that they will be reached at the expected time."

• • •

**I**TAKE it as a sound principle that neither age nor youth is desirable or undesirable as such, but that a well-balanced organization should have an ample number of mature men of judgment and experience and an ample number of younger men gaining judgment and experience. Such an arrangement will insure policies which are in accord with the times. The corporation was not so balanced, and in 1931 we revised the Pension Plan in order that men might retire in reasonable comfort and security at a time when there should be no need for them to work. During the years 1928-1937 inclusive, employees in high and in low positions to the number of 13,533 retired or were retired on pensions.

The average age of all the employees of the corporation is now about 40 years. The bulk of the employees are between 30 and 50. The

number of employees between 25 and 30 years is slightly greater than the number between 50 and 55 years, but the number between 55 and 60 years slightly exceeds those between 20 and 25 years, and there are more employees between 65 and 70 years than there are below 20 years.

## Apprentices Trained

Recognizing a threatened future shortage in skilled workers and also recognizing that many high school graduates have no opportunity to acquire skill which would enable them to earn higher wages, we have brought into being in the Carnegie-Illinois Corp. what we call a plan for apprentice training but which is really in the nature of an industrial university. The boys, who must be at least 18 years of age and of good character, are given a thorough mechanical training in the shops and mills and at the same time are taught mathematics, mechanics and the strength of materials, with specialized technical instruction according to the subject on which the student chooses to concentrate.

The boys are paid at nearly the same rate as common labor and hence no boy need, for the lack of funds, give up the opportunity to qualify himself for the higher pay ranges and the eventual chance of becoming an executive. Most of the corporation's executives began in the ranks and without the advantage of such training. We fervently desire to keep open the way from the bottom to the top.

**I**N the prior sections, the corporation has been considered in its producing and employing phases. But, although the corporation and its subsidiaries—the group that has come to

be known as United States Steel—are legally things of themselves, actually they are only methods of ownership by which men and women can put their savings to work. The officers and directors of the corporation are in the nature of trustees of the savings entrusted to them.

On Dec. 31, 1937, the registered owners numbered 213,169 — among them being 87,618 women, 9,610 trustees or guardians and 40,000 employees. They were located in every state and territory of the United States and in nearly every country in the world. Ninety per cent of all the registered owners held less than one hundred shares of stock each, and 74 per cent of the holders of common and 66 per cent of the holders of preferred stock held less than twenty-five shares each.

## Not a Mystery

There is nothing mysterious about what United States Steel companies do to earn a living. They are bound by exactly the same rules as those who work for them. They live on the money they get from the public in exchange for goods and services. If they pay out more than they take in, they are in the same position as anyone who spends more than he earns. The deficiency has to be met by drawing on savings or by borrowing. Everyone knows that spending beyond earnings can go on just so long and no longer.

For current expenses and payments to the owners, United States Steel must rely upon the amount which it receives from the public in exchange for goods and services. Since it has been the prudent habit of the corporation never to pay all the current earnings to the stockholders, there has



through the years been built up a rainy day or surplus fund which has, from time to time, been used to finance additional construction and to pay the difference between outgo and income during bad years. The portion of this fund in cash or easily marketed securities has never been large enough to pay the wage bill of a single year. Events have demonstrated that the corporation has never withheld from the owners a larger sum than was needed for the safe continuance of the corporation as a going concern.

**F**OR capital expenditures—that is, for the cost of facilities to keep in step with the development of the nation and of the art—the corporation has only three sources of money. These are: (a) the amounts that have been withheld from the owners; (b) borrowing; and (c) the sale of additional capital stock. The possibilities of borrowing or of selling stock are limited by the supply of funds and the willingness of investors, large or small, to share in the fortunes of the corporation. That willingness depends in a large degree upon the performance of the corporation as an earning instrument.

The whole financial picture of United States Steel through these ten years is contained in the ten annual reports covering the period. They are wholly comprehensive, but they do not—and in the nature of things cannot—resolve affairs into their broad eco-

nomic elements. Therefore two accounts of a different nature are here attached. The first shows "How We Earned Our Living." The second shows "How We Secured Our Funds." Let us take them up in that order.

The money received by United States Steel during the years covered by the account here stated totaled nearly seven billion dollars. In order to do this business, United States Steel had to lay out certain amounts. It had to buy goods and services from others to the sum of \$2,496,000,000. A considerable portion of this outlay was for railroad freight, the price of which is fixed by law, and, as to the remaining items, United States Steel had to pay market prices.

#### Taxes Beyond Control

In addition to paying for goods and services, it also had to pay out the sum of \$467,000,000 in taxes. United States Steel could not control these payments, for tax rates are fixed by law.

And, finally, it had to pay out or set aside the sum of \$518,000,000 for the depreciation and depletion of tools, buildings, mines and other properties. Every pound of iron and steel produced causes wear and tear on machinery and buildings and draws on the reserves of ore and coal. United States Steel cannot keep its plant from wearing out, and unless it sets aside money for wear and tear, it cannot stay in business.

Thus United States Steel actually

has no control over 50 per cent of the money it receives from the public. It must pay out half of every dollar it gets, in order to do business. The amount so paid out, however, with the exception of taxes, is nearly all made up of wages, for those from whom United States Steel buys must in turn pay wages. United States Steel does some of its own building, and, during the account period, paid out \$103,000,000 in wages which in a smaller concern would have been paid to outside contractors. These wage payments are in addition to the wage payments in the stream of production.

The balance remaining, being 50 per cent of the dollar taken in by U. S. Steel, has to be divided between those who own the various plants and other properties and those who manage them and work with them. United States Steel over the period, which comprised some very good years, some very bad years and some moderately bad years, paid out for wages and salaries 84 per cent of the balance remaining. That left only 16 per cent for the owners and of this it paid out \$82,000,000 as interest on money loaned to the company on bonds and mortgages. United States Steel has no choice as to paying this interest, just as an individual has no choice about paying the mortgage interest on his home.

**U**NITED STATES STEEL paid out the sum of \$472,000,000 as a return to those who owned the property used by the managers and the workers. This was 13.6 per cent of the sum left over. However, not all of this was earned during the period. United States Steel had to draw to the extent of \$13,000,000 on money which had previously been earned but had been left in the business as working capital instead of being distributed as earnings.

Taking the value of United States Steel property as shown by its books—which is the investment cost of the property—the actual earned return to the owners of the property over a period that included great prosperity and deep depression was at the rate of 2.88 per cent a year.

#### Balance Remaining "Vital"

The figures as exhibited are of very great moment in considering the system under which we live and how it may be improved, for, while the account is of United States Steel, all business will break down into the same component parts. In the item "Goods and Services Purchased from Others" are thousands of corporations, firms

#### HOW WE EARNED OUR LIVING

January 1, 1928, to December 31, 1937  
(000,000 omitted)

U. S. Steel received from the public in exchange for goods and services.....	\$6,959	
This was disposed of as follows:		
Items over which U. S. Steel had no control:		
Goods and services purchased from others .....	\$2,496	
Taxes .....	467	
Depreciation and depletion .....	518	3,481
(Of which \$103,000,000 was wages paid directly by U. S. Steel and not included in "Wages" below)		
Balance remaining (being 50% of the gross receipts) .....	\$3,469	
Disposed of as follows:		
Wages and salaries (being 84% of "balance remaining").....	2,928	
Leaving a balance of .....	\$ 541	
Disposed of as follows:		
Interest paid for the use of assets representing savings, the ownership of which is evidenced by bonds and mortgages .....	\$ 82	
Dividends paid for the use of assets representing savings, the ownership of which is evidenced by preferred and common stock, being 13.6% of "balance remaining" .....	472	554
Leaving a deficit of .....	\$ 13	

(The sum of \$554,000,000 paid for the use of assets by U. S. Steel reduced to an average annual return on the average amount of assets used during the period amounts to 2.95% per year. Since \$13,000,000 was withdrawn from prior earnings, the earned return was 2.88% per year.)

and individuals whose affairs, in turn, contain exactly the same elements as the affairs of United States Steel. The vitally important item is the "Balance Remaining," for out of that item must come the returns to the owners and to the workers. No matter what form of industrial or social organization may be adopted, the three items "Goods and Services Purchased from Others," "Taxes" and "Depreciation and Depletion" will exist in some form, for no enterprise can be wholly self-contained, every government must, in some fashion be supported, and no one can prevent tools and machinery from wearing out. Changing the form of ownership will not change the elements.

The whole social question, therefore, revolves about the "Balance Remaining." Out of that sum must come the returns to the owners and to the workers. This fact is inexorable and cannot be changed. It is sometimes claimed that wages must be arbitrarily adjusted to certain standards of living. It seems to be forgotten that the standards of living are founded upon the record of wage paying ability and that, if industry in the past had not progressively advanced wages, there would be no basis for the high standards we have already expressed. Take the wage record of United States Steel.

#### Favored High Wages

United States Steel has always believed in high wages. It has everything to lose and nothing to gain through low wages. If ours were a low-wage country, there would not be enough business to support a concern employing as many men as does United States Steel. This is not to say that high wages always mean high purchasing power.

The purchasing power is in the goods produced and, if the wages paid do not result in goods produced, the dollars in the pay envelope will be only ghosts of dollars, for they will have no buying substance. Were production and wages not linked, things would be very simple. The Government could simply print dollars and pay all of us.

But if no one worked, nothing would be produced and so there would be nothing to buy with the money. We should be like men adrift at sea with plenty of money but nothing to eat.

United States Steel can distribute as wages only the money that comes to it from production—from selling goods. It has managed through the years heavily to increase the hourly

rates of pay. The reductions have all been forced by severe depressions and only four out of the thirty-six years which cover the life of United States Steel have seen reductions. These reductions have been only pauses in the march forward. Here are the facts.

**T**HE base rate for common labor in the Pittsburgh district gives the best general indicator of the wages paid by United States Steel. The hundreds of classifications of rates do not all rise or fall exactly with the lowest rate, but the trend of the base rate shows the trend of wages. From 1895 to 1900, which was the period directly before the organization of United States Steel, the Pittsburgh district rates for common labor rose from 12c. to 15c. an hour. The rate was increased in 1902 (which was the first full year of United States Steel's operations) to 16c., and with dips in 1904 and 1905, attained 20c. in 1913. That was the year before the Great War.

During the war period, rates went steadily upward and were at 51c. during the post-war boom of 1920. Thereafter the rates declined—although not so rapidly as the prices received for steel products—but rose again in 1922 and 1923, after which they remained unchanged until the depression of 1930, reaching a low point in 1932. From that point they climbed upward and in 1936 passed the 1920 record. The rate of 62½c. established in March, 1937, is an all-time high.

Since the establishment of U. S. Steel, its average hourly wage rates have increased by well over 300 per cent.

#### Purchasing Power Counts

Hourly rates do not tell the story, for families have to live by the year and not by the hour. And also dollars do not tell the whole story, for in 1920 the prices of things were so high that the high wages paid for an hour's work bought no more in goods than the lower rate of 1932. The point is that purchasing power is not always raised by raising wages and is not always lowered by lowering wages.

In terms of living—which is the real test—the average employee of United States Steel today is far better off than was the average employee thirty-six years ago. Anyone who doubts that need only compare what he has with what his father had. For instance: In 1909-1910 the supposedly inexpensive automobile was introduced. It cost around \$1,000 and the average wage and salary paid by United States Steel was \$780 a year.

In 1937 an incomparably better car could be bought for \$500 and United States Steel's average annual wage was about \$1,700. What before cost about sixteen months' work now costs less than four months' work.

Take articles that are bought by every household. Take the year 1914 as a typical price year. In that year United States Steel paid an average wage and salary of \$905. Of course some men received more and others less than the average. Call the average wage and salary \$900 for 1914 and \$1,700 for 1937. The increase is approximately 89 per cent. During the same period the cost of living—food, rent, clothing, and so on—rose about 40 per cent. That again, is an average. Some articles of general use have increased in price and others have decreased—clothing is one that has sharply increased. A supply of clothing which cost \$175 in 1914 cost \$218 in 1937, or about 2 1/3 months' work as against about 1 2/3 months' work.

*THE concluding installment of "Ten Years Of Steel," by Myron C. Taylor, retired chairman of the board of United States Steel Corp., will appear in next week's issue of THE IRON AGE. Due to space conditions, the last chapter of Mr. Taylor's article, which THE IRON AGE is publishing in full, could not be printed in its entirety this week.*

#### Boeing Plant Enlarged To Build Large Metal Planes

**R**APID development of production plans for several new lines of large metal airplanes has been accompanied by plant expansion in the Boeing Aircraft Co.'s Seattle factories. While the fleet of new four-engine Pan-American Clippers is being assembled at Boeing's plant No. 1, extensive modernization has been taking place in plant No. 2.

The first unit of this building, a 200 x 300 ft. assembly section, was built in 1936 by the Austin Co. Recently the same builders have completed two additional 125 x 300 ft. bays, increasing this plant's clear working space to nearly 5,000,000 cu. ft. There are 135,000 sq. ft. of main floor area, and balconies with an area of 21,000 sq. ft. In this new 300 x 450 ft. modern factory building, the four-engine Boeing Model 307 transport for TWA and Pan-American Airways will be assembled. In addition, sub-assembly and final assembly of four-engine Flying Fortresses will be handled here.

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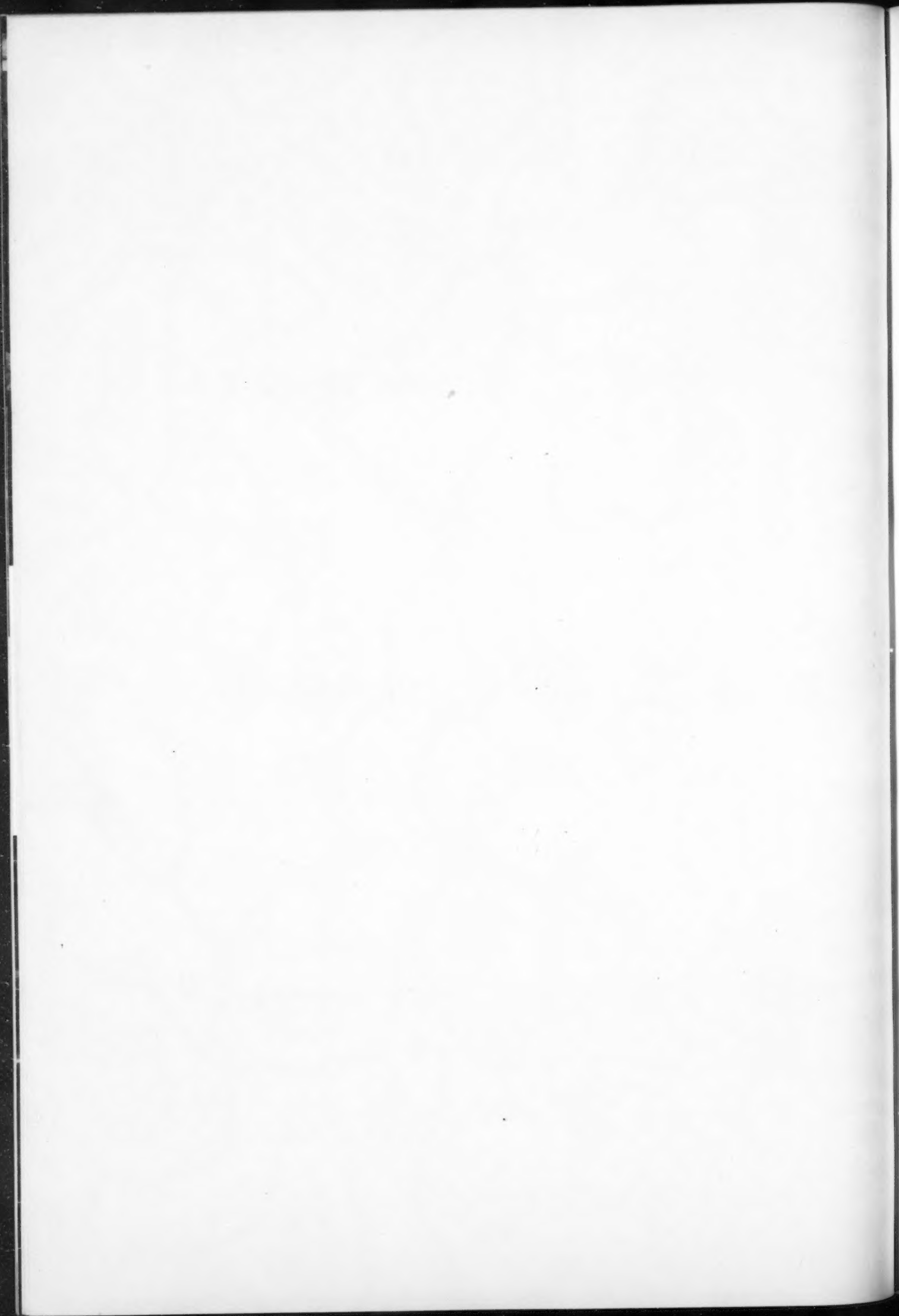
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E. R. STETTINIUS, JR., Chairman of the Board, United States Steel Corp. Drawn by John Frew for The Iron Age.







# Capital Goods Output Unchanged From Preceding Week



THE IRON AGE Weekly Index of Capital Goods Activity

(1925-27 = 100)

	Week Ended Apr. 23	Week Ended Apr. 16	Comparable Week	
			1937	1929
Steel ingot production .....	39.4	40.1	118.2	131.0
Automobile production .....	49.1	49.8	112.8	127.3
Construction contracts .....	70.2	73.2	60.2	130.9
Forest products carloadings .....	44.9	40.1	64.7	125.0
Production and shipments, Pittsburgh District .....	50.7	51.5	105.6	125.1
Combined index .....	50.9	50.9	92.3	127.9

ACTIVITY in the production and distribution of durable goods in the week ended April 23 was unchanged from the previous week's level at 50.9 per cent of the 1925-27 average, according to THE IRON AGE seasonally adjusted index. The position of the index in the past two weeks is the lowest since the first week of July, 1935.

Declines in four of the components of the index were neutralized by a greater-than-seasonal increase in the volume of lumber shipments. The week's carloadings totaled 25,422 cars, a gain of 13 per cent over the preceding week, and the index of this factor advanced 4.8 points to 44.9. In a comparable week a year ago 54,696 cars were loaded and the index stood at 64.7.

Automobile assemblies, reflecting the labor disturbances of the past week, declined to 60,563 units from 62,021 in the previous week. This drop in production lowered the automobile index 0.7 point to 49.1. A year ago assemblies totaled 139,090 units.

As had been anticipated, the dollar volume of construction awards for the past week declined sharply from the preceding week's total of \$79,373,000. About half of this total was accounted for by large private housing projects, but in the past week, with the exception of one small project, support from this source was lacking and awards amounted to only \$39,430,000, divided as follows: Private, \$13,770,000, and public, \$25,660,000.

Components of The Index (1) Steel Ingot Production Rate, from THE IRON AGE; (2) Automobile Production, from Ward's Automotive Reports; (3) Revenue Freight Carloadings of Forest Products, from Association of American Railroads; (4) Industrial Productive Activity in Pittsburgh District, from Bureau of Business Research of University of Pittsburgh; (5) Heavy Construction Contract Awards, from Engineering News-Record.

# New Aids for the Welding

SINCE publishing the last review of newly introduced equipment suitable for the welding shop (Feb. 17), a number of announcements have been made relating to arc welding generator sets. For the first time there is available a diesel engine driven set, which brings the economies of this type of power to the welding field. Means to provide more flexible control are also noted in some of the recent designs. A revolving table primarily intended for arc welding has been placed on the market by a manufacturer entering the field for the first time. Several new announcements concerning electrodes and electrode holders are reviewed, and a special coating press for welding wire is described. One of the most interesting developments is a mechanical-electrical arc cutting saw that runs cold and produces a narrow kerf. Variable speed drives and welded steel frames are common characteristics of the latest products of the spot welder makers, while the gas welding hose suppliers are featuring dual types to prevent entangling. Improvements are offered in resistance heaters for pipe welding and for heavy duty soldering, also in an electric rivet heater.

o o o

FIRST to be placed on the market by an American manufacturer is a diesel engine driven arc welding set made by the *Lincoln Electric Co.* of Cleveland in collaboration with diesel engine manufacturers. Thus, the economy of diesel operation is brought to applications of welding requiring engine driven arc welding generators. For example, at full load operation, the diesel uses only 1.5 gal. per hr. of fuel oil as compared with 2¾ gal. of gasoline for the conventional gasoline engine driven welder. Depending upon the price of fuel oil used, fuel costs are cut 33 to 86 per cent.

The particular diesel engine used has been built to the specifications of Lincoln engineers. A patented combustion chamber design is employed, whereby the turbulence of the fuel and air mixture is accelerated, thus giving more complete combustion, increasing efficiency and minimizing smoke and noise. Other engine features include: pintle type fuel nozzles said to be non-clogging and non-enlarging; air, lubricating oil and fuel oil filters; and the use of standard 6-volt automobile batteries for starting. The main welding generator is

used as the starting motor and the exciter charges the batteries. This arrangement results in an extremely compact engine.

The arc welding generator is the 300-amp. "Shield-Arc SAE" unit equipped with dual-continuous control. High capacity and high efficiency together with cool operation are claimed.

## "Multi-Range" Arc Welders

Complete absence of "dead spots" is claimed for the new line of "Multi-

Range" arc welders made by the *Hobart Brothers Co.*, Troy, Ohio. It is pointed out that the new models embody the same proven principles of control as previous models but the welding range of each machine is now divided into 10 ranges with a 100-step, continuously wound rheostat for controlling the volt-ampere adjuster in each range. As a result of the use of special windings, extra turns and added copper, the reactance is automatically varied to suit actual welding requirements, according to oscillograph tests.

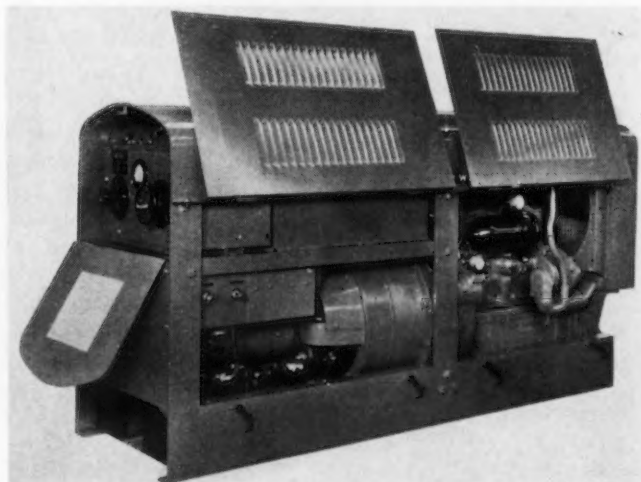
Hobart's remote control feature is retained and improved. The volt-ampere adjuster is now located compactly within the 10-range dial where it automatically plugs in or out when used on the machine or at any distance away by means of a lamp cord extension. The welding ranges are selected by turning a large rubber covered handwheel.

These Multi-Range arc welders are now available in Junior models with built-in electric motors in 100 and 150-amp. ratings or with self-starting gasoline engine in a 200-amp. rating. Senior models include a range of 150 to 600-amp. rating with electric drive and 200 to 600-amp. with gasoline

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**SUBSTANTIAL** savings in fuel economy may be had with the new 300-amp. diesel engine driven arc welding set made by Lincoln Electric Co.

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# Department

By FRANK J. OLIVER  
Associate Editor, *The Iron Age*



THE new P&H Hansen 150-amp. vertical arc welder is less than 4 ft. high.

engine drive as well as 200, 300 and 400-amp. generators only.

## Vertical Type

A 150-amp. vertical type welder, available for a wide range of work in welding lighter gage metals, ferrous and non-ferrous, has been introduced by the *Harnischfeger Corp.*, Milwaukee. Operation is simple, with plug-in type cable receptacles for easy current reversing, and patented single-current control. Furnished in a.c. drive only, this machine is less than 4 ft. in overall height. A towing handle provides easy movement about the shop and when raised forms a three-point base. Ventilation and cooling are provided through a fresh air intake at the top and exhaust at the bottom.

## Polarity Control

With the increasing use of special welding electrodes, it has become nec-

essary to equip all welding sets with some sort of polarity-reversing switch, to facilitate change of current flow in the arc. On self-excited generator sets, a large knife switch is often used that is heavy enough to carry the entire welding current. In a new polarity control scheme devised by *Westinghouse*, the field of the welder is energized from a separate source comprising a small transformer and a rectox unit. This unit excites the field just strong enough to control the residual magnetism and consumes only 25 to 100 watts. It practically guarantees against reversal of polarity and at the

same time eliminates the heavy switch mentioned.

## Revolving Welding Table

A revolving welding table originally devised for their own convenience is now being marketed by the welding division of the *Ransome Concrete Machine Co.*, Dunellen, N. J. Primarily intended for welding tanks and other circular products, the machine has a table 31 in. in diameter and 25 in. high when horizontal. The table tilts to a vertical position either side and in such position will carry a load of 600 lb. with a maximum diameter of 34 in. Work of larger diameter can be carried with the table in a horizontal plane. Eight radial slots are provided for convenience in bolting down work.

Drive is by  $\frac{1}{4}$ -hp. motor operating through a variable speed transmission and worm gear reducer. Range of table speeds are from 0.055 to 0.333 r.p.m. corresponding to welding speeds of 0.43 to 2.6 ft. per min. on work 30 in. in diameter. The drive is reversible,



## ABOVE

1000 available combinations of voltage and welding current are featured in the Hobart "Multi-Range" arc welder sets.

o o o

## AT RIGHT

WORK weighing up to 600 lb. and 34 in. diameter can be revolved with the table in a vertical plane in the Ransome welding table.





**M**ETAL reduced to a molten state by a stabilized arc is swept out of the kerf by the soft saw blade revolving at high speed in this new Miller-Strobel electric arc saw.

and for quick positioning, the table can be instantly disconnected from the driving mechanism.

#### Electric Arc Saw

An electric arc saw said to cut any metal from non-ferrous materials to tungsten carbide equally well, without changing the temper or the structure of the metal is announced by the *Miller Electric Mfg. Co.*, Appleton, Wis. Known as the Miller-Strobel electric arc saw, the mechanical unit consists of a soft alloy steel blade provided with a multitude of small, straight teeth and driven at high speed

by V-belt from an electric motor. Cuts are made by means of a controlled arc that leaps ahead of the saw and brings the metal along the kerf line to a molten condition. The saw blade serves only to sweep the molten metal from the kerf and as an electrode for the arc. The blade is found to be cool after making a cut.

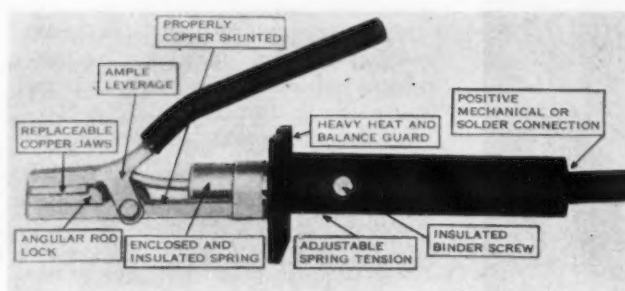
Rotation of the blade shortens and lengthens the arc, producing an oscillating effect on the current and tending to stabilize the arc and direct its path. The arc actually travels in a path only a few thousandths of an inch wider than the blade.

To generate the arc, a specially

built welding transformer is used and current is controlled to cut metal of varying thicknesses. The machine can be furnished in special models for slotting, turning, threading and arc milling.

#### Electrode Holder

*Tweco Products Co.*, Wichita, Kan., has brought out a new line of improved electrode holders, said to be well balanced, light in weight, cool running and easily operated. The holder is made in three sizes with ratings of 200 to 400 amp. and with electrode capacity of 1/16 to 3/16 in. in the smallest size and 1/16 to 3/8 in. in the largest size. The holders have a com-



#### ABOVE

**T**WECO electrode holders are made in four sizes with capacities up to 400 amp.

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#### BELOW

**T**HE Beatty double-acting hydraulic extrusion press has been specifically designed for coating welding rods with material charged in slug form.

#### BELOW

**S**MOOTHARC electrodes, made by the Harnischfeger Corp., now come packed in hermetically sealed cans so that they may be stored indefinitely with safety without fear of moisture ruining the electrode coating. Packages are clearly marked.

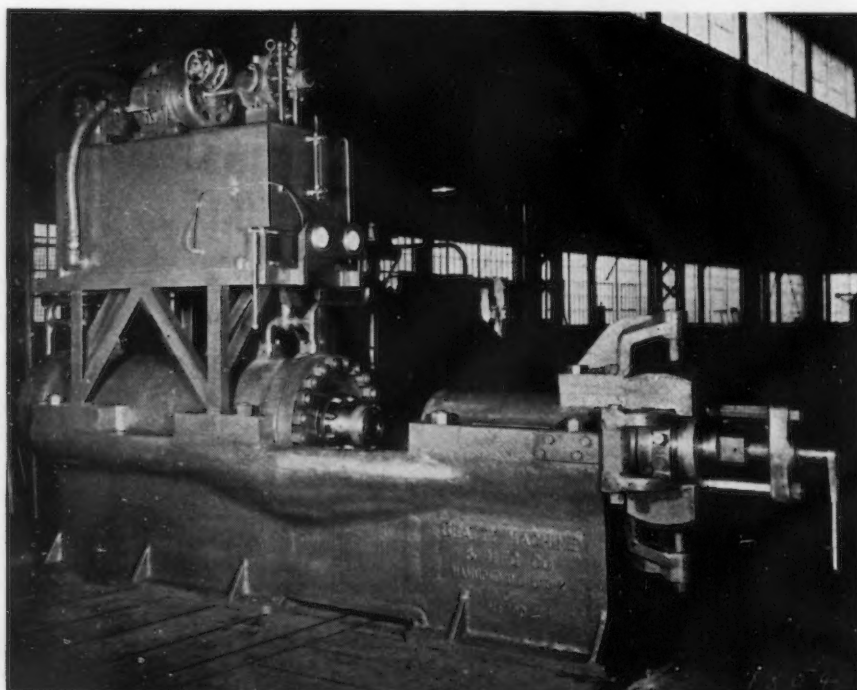


pletely insulated spring tension member protected from spatter by an enclosure. Adjustment of the spring tension may be had by turning the fiber insulated handle.

Replaceable copper jaw tips are standard on all models and aside from the regular grooves they have a positive angular rod lock. Rigid channel steel construction is applied, copper shunted and cadmium plated. The handle grip, guard and trigger are all said to be shock-proof.

#### Shielded-Arc Electrodes

A complete line of shielded-arc welding electrodes are being offered by the *McKay Co.*, Pittsburgh, for which claims are made of quieter oper-



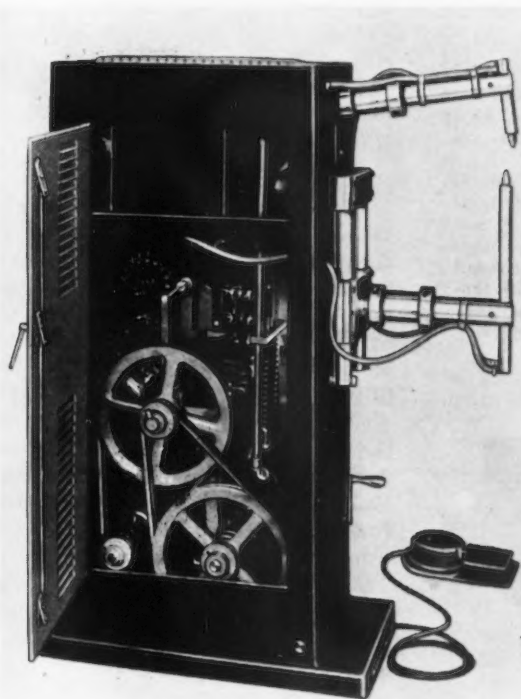
ation, faster welding time, finer bead appearance, and greater adaptability. No changes in customary operating practice are required. The line is a result of a newly equipped plant at York, Pa., development work on the part of factory experts plus supplemental work by an independent research organization.

These electrodes are made in the following types: All position, flat position and fillet welding, general purpose fillet welding, light sheet metal,

comes an extremely hard martensite layer. Harmang electrodes operate with the work negative and the electrode positive, and are made in sizes from  $\frac{1}{8}$  to  $\frac{1}{4}$  in. and for use with currents ranging from 90 to 140 amp.

#### Machine for Coatings

An improved type of motor driven hydraulic extrusion press for welding electrode coating applications has been developed by the *Beatty Machine & Mfg. Co.*, Hammond, Ind. This new



#### AT LEFT

**VARIABLE** speed drive by V-belt is a feature of the new series of Ace motor driven, automatic spot welders.

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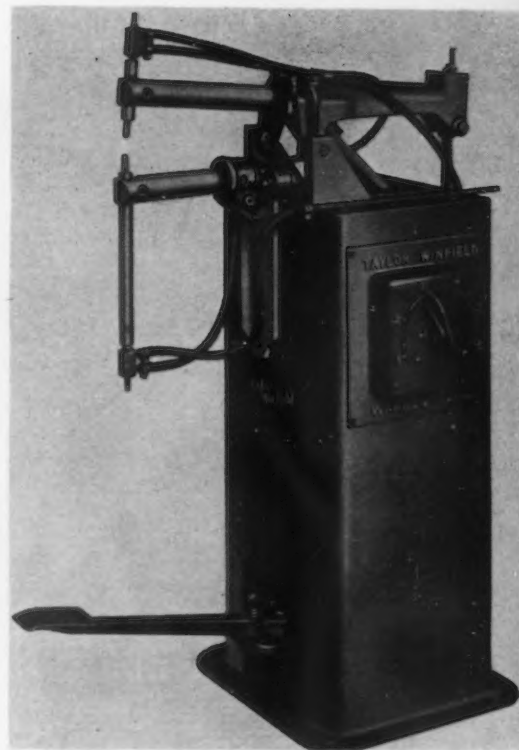
#### AT RIGHT

**A**n all welded steel frame and a completely redesigned contactor are features of the improved type W Taylor-Winfield foot operated spot welder.

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#### BELOW

**A**REEVES drive gives a range of 20 to 150 strokes per min. to the upper electrode in this 75-kva. Eisler spot welder, with welded steel frame.



box type frame allowing plenty of open space for the loading material chamber and free access to all packing. The die head is of the breach block type and is intended for use with coating material in slug form. Using three 16-in. slugs, the normal time required for return stroke, loading the material cylinder and resuming pressing is  $3\frac{1}{2}$  min.

#### Spot Welders

A one-piece all welded steel frame replaces the former two-piece bolted

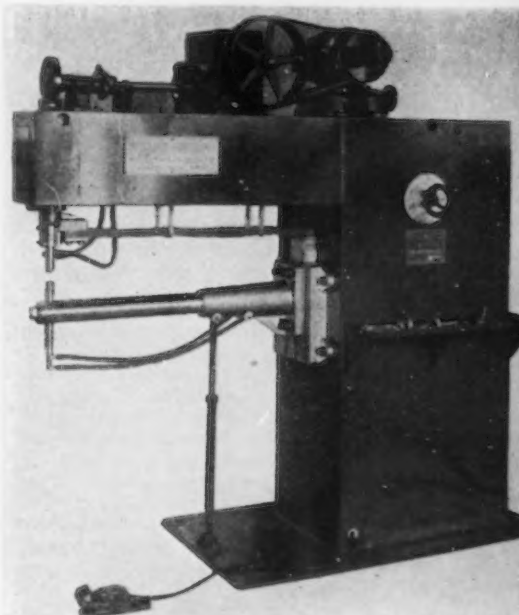
and cast iron. There are also two types for a.c. transformer welding machines, together with a series of electrodes for general purpose welding on mild steel.

*Harnischfeger Corp.*, Milwaukee, has also developed a new electrode known as "Harmang" for welding parts subject to heavy impact, such as manganese castings, railroad frogs and crossings, and dipper teeth. The base metal of this electrode is nickel manganese steel, ranging from 11 to 14 per cent manganese and  $3\frac{1}{2}$  to  $4\frac{1}{2}$  per cent nickel. Carbon content is in excess of 1 per cent.

The slag coating which stabilizes the arc and protects the metal against loss of carbon and manganese is kept to a minimum, so as not to interfere with the rapid cooling required to form an austenitic deposit. With cold working, such as hammering and peening, the soft manganese deposit be-

No. 100 series press is made in three sizes, all with material chambers 50 in. long, with diameters varying from  $8\frac{1}{4}$  down to  $5\frac{1}{2}$  in. In any size the operating pressure of the material is 10,000 lb. per sq. in. Capacity of the machine depends largely upon the ability of the wire feeding attachment, and the handling of the electrodes after leaving the press.

This press is a completely self-contained unit with a motor-driven pump, relief and control valves, as well as oil reservoir and pressure gages mounted directly above the main cylinder. A duplex pumping unit is employed for rapid movement of the plunger on the return and advance stroke to the material chamber after loading, and the variable speed control allows adjustments to be made for feeding various sizes of electrodes. The hydraulic cylinder is double-acting and it is mounted in a one-piece





cast iron frame in the newly designed type W foot operated spot welder, made by the *Taylor-Winfield Corp.*, Warren, Ohio. In working out the new design, particular attention was paid to pleasing appearance, elimination as far as possible of projecting surfaces, and to ready accessibility of parts requiring adjustments. The contactor is much more rugged and capable of withstanding heavy overloads. All electrical parts, except the low voltage members, are fully enclosed.

Transformer capacities are 10, 15 and 20-kva., of any commercial voltage and frequency. The machines are regularly supplied with a stationary lower horn for standard welding points. Water-cooled or special off-

satisfactorily with the same size welder that will also handle two thicknesses of 8-gage stock. Horns are solid copper, are provided with water-cooled electrode holders, and may be rotated. Pressure is applied on the tips by a toggle lever action said to afford smooth, shockless and uniform distribution of load during the welding cycle. This action embodies an adjustable compression spring.

A Reeves vari-speed drive, giving a range of 20 to 150 strokes per min. of the upper electrodes is also incorporated in the newly designed No. 600-CFO model spot welder made by the *Eisler Engineering Co.* of 754 S. 13th Street, Newark, N. J. The rated capacity of this particular machine is 75 kva., but it is also made in 35 to

500-kva. sizes. The welder is of the press type with a straight up and down motion to the upper electrodes. A stroke of 1½ in. is normally provided by the overhead driving cam, and on the same shaft is an additional cam which acts as a current timer. In addition, an automatic timer is supplied with the contactor for more sensitive control.

Throat depth is 36 in. but any other depth between 12 and 48 in. may be had. The lower electrode is adjustable both horizontally and vertically. Water cooled electrode holders are standard equipment. A single-phase welding transformer for 25, 40, 50 or 60 cycle service can be supplied. The welding mechanism is completely enclosed in a welded steel box type frame.

### Dual Welding Hose

A new oxy-acetylene hose, known as Duoweld, is being made by the *B. F. Goodrich Co.*, Akron, Ohio, consisting of two strands of ¼-in. 2-braid hose with corrugated cover molded together as a single unit. The cover on one strand is red while the other is green. Advantages claimed for this dual construction are that it prevents the two lengths of hose from becoming tangled with each other, eliminates kinking and is less apt to snag on surrounding objects. This hose comes in lengths of 12½, 25 and 50 ft.

*Electric Hose & Rubber Co.*, Wilmington, Del., has added to their line of dual or Siameez hose construction a so-called "Electric-Siameez" hose, said to be exceptionally flexible and having the strength of two layers of tightly-braided reinforcement. The



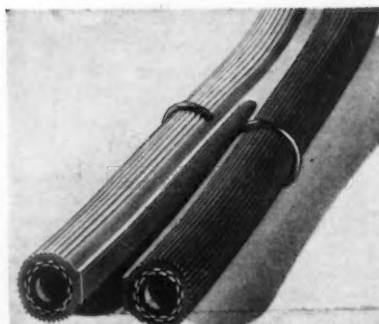
#### AT LEFT

**DUOWELD** hose is molded together to prevent tangling of oxygen and acetylene lines, kinking and snagging.

set points or universal horns can also be furnished. Provision is made to rotate the horns in their sockets and they may also be adjusted in and out. Throat depths up to 36 in. are provided. The horns have an adjustable separation from 3⅝ to 15¼ in. This type W machine is designed essentially for wire work and for the spot or projection welding of light gage sheet metal products.

A new series of automatic spot welders has been recently announced by the *Pier Equipment Mfg. Co.*, 806 Cross Street, Benton Harbor, Mich., in which are featured variable speed drive, mechanical weld timing control and precision pressure application. The power drive of these Ace machines consists essentially of the motor, a Reeves vari-speed drive giving speed variations corresponding to 40 to 120 strokes per min., double reduction V-belt drive, pin-type clutch and magnetic clutch trip, actuated by a foot switch. The speed of operation is adjusted through a convenient hand crank and the connecting rod has provisions for adjusting the length of the stroke from 1 to 2 in. The mechanical timing control permits welds to be made as rapidly as 1½ cycles, or 1/40th sec.

These Ace welders are made in four sizes of 15, 20, 30 and 50-kva. capacity. It is said that material as light as 0.005 in. can be welded as



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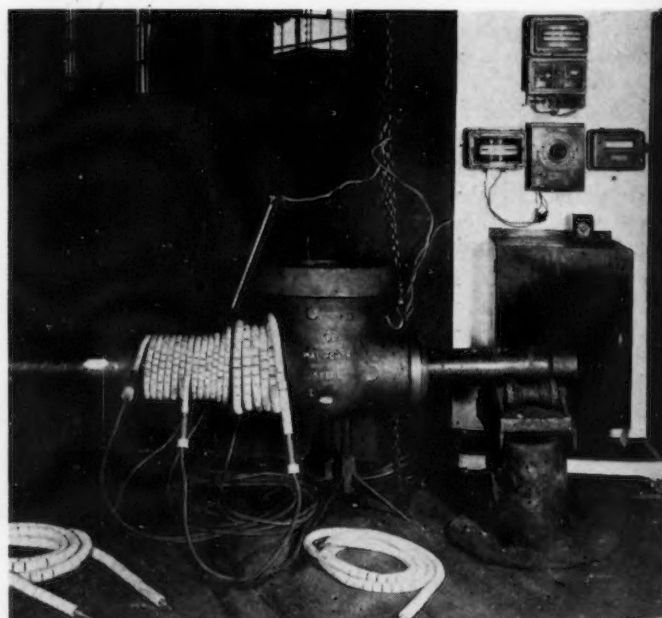
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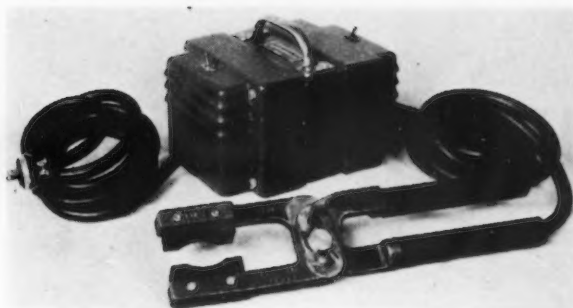
**"ELECTRIC-SIAMEEZ"** hose is a new grade of dual welding hose suitable for working pressures up to 200 lb. per sq. in.

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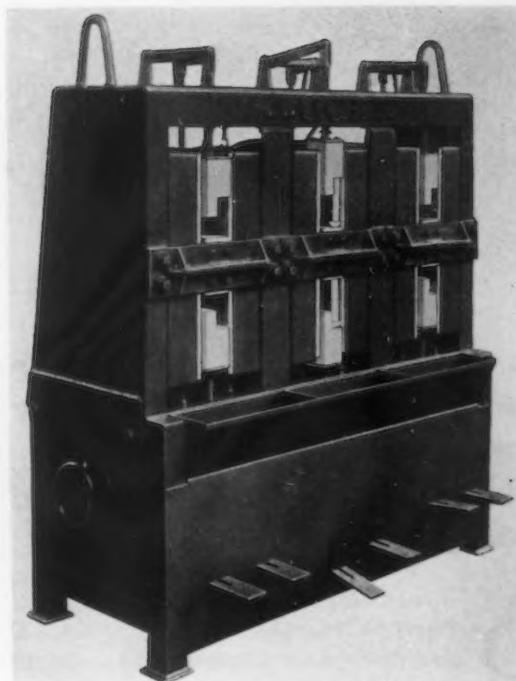
**A** THIRD "Falcon" wrap around coil is added to the preheating units to raise the temperature for stress relieving. These resistance heaters have insulating bushings over their entire length.

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ABOVE  
THE No. 10 "Thermo-Grip" electric resistance soldering unit.



AT RIGHT  
BERWICK electric resistance heaters, made by the American Car & Foundry Co., 30 Church Street, New York, now are available wired for three-phase operation, in addition to single phase. The double-deck, six-electrode heater shown is for heating rivets from  $\frac{5}{8}$  to  $1\frac{1}{8}$  in. diameter. A single deck model of identical capacity is also made.

two-braid hose is joined together by the same integrally-molded web as used on the original "Supero" and "Junior" Siameez grade. The Electric grade is recommended for service in welding and cutting operations, using working pressures up to 200 lb. per sq. in. It is made in  $\frac{1}{4}$ ,  $\frac{5}{16}$  and  $\frac{3}{8}$ -in. sizes.

New York Belting & Packing Co., Passaic, N. J., is now marketing a welding hose designed to guard against accidental explosions caused when both gas lines are subjected to sparks and hot metals. This hose, identified as "Great Seal" welding hose, NY-10003, is constructed of an oxygen and acetylene resisting rubber tube covered with two or three plies (according to size) of strong lightweight duck. Over these plies is braided the safety ply of high-tensile asbestos yarn, with a rubber cover in red, green or black. This safety hose is made in four sizes from  $\frac{1}{4}$  to  $\frac{1}{2}$  in. inside diameter.

#### Heaters for Pipe Welding

For heating carbon-molybdenum pipe during welding, and for subsequent stress relieving of the same pipe, H. O. Swoboda, Inc., New Brighton, Pa., is offering coil-type "wrap-around" electric heaters equipped with insulating bushings over their entire length. The same equipment can also be used for stress relieving plain carbon steel joints where Swoboda's standard solid type heaters cannot be readily applied or where pipe joints are not readily accessible. These "Falcon" coil-type heaters are suitable for temperatures up to 1200 deg. F. For preheating joints on both sides, it is necessary to use at least two of each size. For stress relieving, three of them are required. During the preheating, as well as during the stress relieving operations, the heaters are covered with an insulating blanket to keep down radiation losses. An automatic temperature control panel is regular equipment,

supplied for either single-point or multiple-point control.

#### Electric Soldering Tools

Several new "Thermo-Grip" electric soldering units for all types of soft soldering work have recently been introduced by the Ideal Commutator Dresser Co., 1925 Park Avenue, Sycamore, Ill. These units operate on the principle of heat produced by the resistance in the work to the flow of electric current and are comprised of a transformer and the heads or tools carrying carbon grip. The pliers are made of cast bronze and come in several varieties.

The new all-purpose "Delux" Thermo-Grip soldering unit is supplied with four heads. The "Midget" type head is especially adaptable for small light work. It is also supplied separately with a smaller transformer. For more common soldering work, the "Standard" type head is recommended. It is designed for applying soldering lugs up to 400 amp. size and up to 1-in. copper pipes. The "Fork" type head is handy for heating small lugs, terminals and connections, while the "Pencil" type head is for spot soldering. It has a single-pointed, round carbon rod, used much in the same manner as a welding rod with a separate ground clamp.

The No. 10 heavy-duty type is a large size intended for all heavier soldering work, such as applying lugs and terminals up to the largest 1050-

amp. size, making heavy stator connections, sweating or unsweating copper pipes and fittings up to  $2\frac{1}{2}$  in. diameter on continuous operations, or up to 4 in. in diameter on intermittent operations. Pliers are of conventional type with three position openings to take care of large or small objects. All models are supplied with supply cord and two 6-ft. rubber covered secondary cables. Transformers can be supplied for 110-volt, 50 to 60-cycle circuits, as standard.

#### Salesmen Find Welcome Sign On Plant's Door

THE American Lava Corp., Chattanooga, Tenn., believes in the golden rule so far as salesmen are concerned, and therefore has posted near its front office door a letter signed by the president and headed "Welcome to Salesmen and Other Callers," which reads as follows:

"Bearing in mind that our own sales representatives call on our customers and 'prospects' we expect them to be accorded a courteous hearing, we desire to afford one to you.

"Whatever your errand, unless you wish to discuss politics or strikes, this company expects you to be greeted politely, pleasantly and promptly by everyone with whom you come in contact here. When time is short or callers numerous the usual preference will be shown those from out of town.

"If you have something to sell which does not fall in the usual channels of a purchasing department, ask at the information desk to the left at head of stairs. Please go there first anyway. Thank you for your call. We hope it may be profitable to us both."



## ... THIS WEEK ON THE

**... Detroit in need of Labor Peace Board to enforce pacts and keep industry running ... Auto production passes peak but spring decline will be gradual ... Graham-Paige price reductions of \$104 per car to be announced.**

**D**ETROIT.—The phenomena of labor disturbance during recession has borne down on this area with unbelievable severity in recent weeks. Starting as a wave of trivial irritations (seniority claims during layoffs and grievance hearings) the disturbances then took the form of so-called button checks and dues picketing, followed by strike votes, rioting and lockouts.

The plague has affected everyone—the public, officialdom, and labor itself, as well as management. Tempers are testy; it is time that a united effort was made to effect a cure.

A similar plague swept a small neighboring city a few years ago. Business was in the doldrums then, as now. Irresponsibility, bad faith and stubbornness locked horns, as they appear to have done now. But a lasting solution was found.

The example is Toledo. It is an industrial city much like Detroit with products closely associated with the automobile industry. When that city was torn by strikes, a battleground of bitterness, pressure of the newspapers and public opinion was brought to bear on the sore spots. Labor and management, both more than a little unwilling to give in, were given to understand that they must reach terms and adhere to them. With the cooperation of labor and management and representatives of the public, Toledo evolved what is known as the Industrial Peace Board, representing all three interests.

To observers who have seen it work, advocacy is natural. Perhaps Detroit, despite its size, and Flint, Pontiac, Saginaw and Bay City are all in the same league as Toledo, as it

were. It is about time that a leader stepped out of the near-chaos and tried a hand at fitting this proven plan where it is sorely needed.

### **Revolt Against Martin**

Underlying the present difficulties in General Motors plants at Flint is an incipient revolt against Homer Martin and the candidates he put in power as local officers of the UAW union. From sources close to the union president it is learned that Martin forces have warned company officials that, while they do not want to test union strength by a strike now, they may have to swing along with the majority of the local to avoid an overthrow.

Close checking indicates that the current rumpus is not part of a concerted UAW attempt to maintain wages or to force the issues of seniority or the closed shop. In this, however, there is sharp division of opinion between higher-ups of the union and local officers and men.

The latter are worried about possibility of wage cuts but, most important, they believe, is the necessity of forcing a closed shop as final security for their seniority system. That really is the idea behind the button checks and dues drives, local union sponsors admit.

Financially, the international union is incapable of much strenuous strike activity. Many local unions are reported to have treasuries of \$40,000 to \$60,000, however, and in case of difficulties the international has these funds to count on.

### **Automobile Peak Passed?**

Whatever the outcome of the favorable strike vote taken late last week

by Flint unionists, there will be little effect on the remainder of the year as regards auto output. It seems probable that production figures have passed the seasonal peak, with production for last week down nearly 1500 from the previous week. The total for last week was 60,563 cars and trucks, according to Ward's Automotive Reports. The output of the previous week was 62,021, and that for the corresponding week in 1937 was 139,090. Ford maintained its previous level, while Chevrolet was up 500 units and Plymouth regained enough to get it back to the daily average which it had maintained before the Briggs strike held up bodies.

While the seasonal peak is passed, and the decline started, it is expected to be much more gradual than usual. The average dealer today has stocks in good shape and intends to keep them that way. Factories are cooperating, in most cases building cars only when orders actually reach the plant. Sales continue to show improvement.

Within a day or so Graham-Paige will announce price reductions up to \$104 in an effort to stimulate late spring sales and dispose of the lot which is running through production on money recently borrowed when creditors approved a rehabilitation plan. Other manufacturers have failed to announce similar reductions, although they were at one time being planned. Apparently about the time that major 1939 programs were cancelled, price changes were ruled out too.

An effort to introduce better methods for reconditioning used cars is being promoted by the Used Car Reconditioning Institute which opened its doors on East Grand Boulevard, Detroit, this week. The institute represents a group of manufacturers, consisting of Albertson & Co., the Black & Decker Mfg. Co., Blackhawk Mfg. Co., Cee-Bee Laboratories, Clayton Mfg. Co., the DeVilbiss Co., E. I. du Pont de Nemours & Co., Inc., Automotive Materials Co., Fairmount Tool & Forging Co., Marquette Mfg. Co.,



# ASSEMBLY LINE . . . .

By W. F. SHERMAN  
Detroit Editor

Watervliet Tool Co., and the Walker Mfg. Co.

Monday of this week marked the start of the twenty-first annual convention of the National Automobile Dealers Association at the Hotel Statler, Detroit. Major interest, of course, centered on the trade practice conference under auspices of the Federal Trade Commission and on the topic of used car junking.

Recent installation of an air conditioning system in the Cadillac-LaSalle foundry has been announced by Nicholas Dreystadt, general manager. The system consists of five units with a capacity of 70,000 cu. ft. of air a minute. All the air is washed before being circulated through the foundry building. Cost of the system is reported to be \$60,000.

## Annual Wage Plan

Developments last week and immediately preceding Henry Ford's visit to President Roosevelt led to the question, "Will Ford adopt the annual wage plan?"

The Ford Brotherhood of America, a union organization which the UAW claims is under company sponsorship, has formally asked the Ford Motor Co. for a \$1,500 annual minimum wage. Its demands were submitted last Saturday to Louis C. Colombo, senior counsel for the Ford company. According to the brotherhood's attorney, the union has promised that each member would buy a car from the company as part of the bargain. He said that an answer to the request is expected within 10 days or two weeks. The announcement immediately set up a lot of speculation whether warranted or not. The current story was that Ford would announce after his visit with the President that he had adopted the annual wage.

According to the brotherhood's attorney, the proposal is the first concrete result of negotiations which began last April. He said that the union has 21,400 members in the Rouge plant, not a majority since the

plant employs nearly 90,000 men when operating at capacity.

## Strikes Tie Up Plants

Strikes have tied up eight plants of Bohn Aluminum & Brass Co., principally in a dispute over seniority. Strikes are pending in Buick, Chevrolet and the Flint Fisher Body plant. However, Homer Martin had issued an announcement to the effect that the international union would not sanction strikes until every portion of the grievance principles had been followed.

## Automatic Machine Co. Is Reorganized

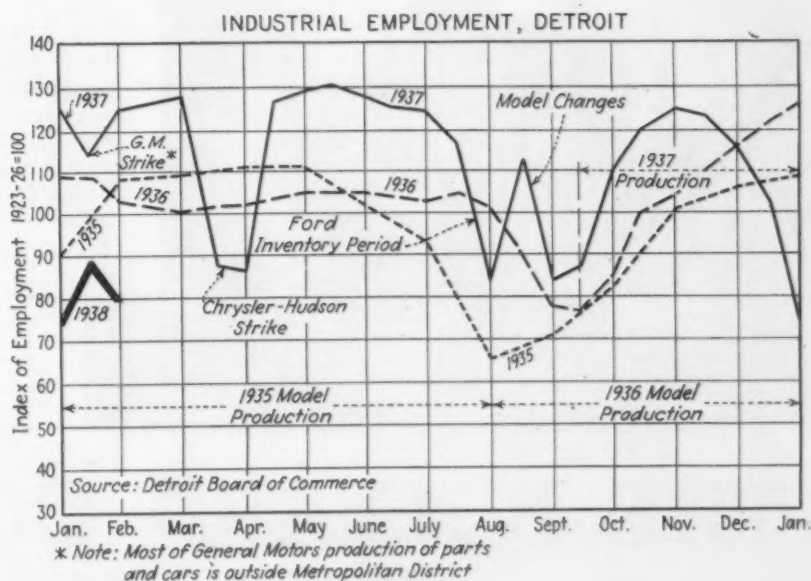
THE Automatic Machine Co., Bridgeport, Conn., manufacturer of various types of machinery, has been reorganized under section 77-B of the National Bankruptcy Act and has been succeeded by a new corporation to be known as the Automatic Machinery Mfg. Corp. The plan of

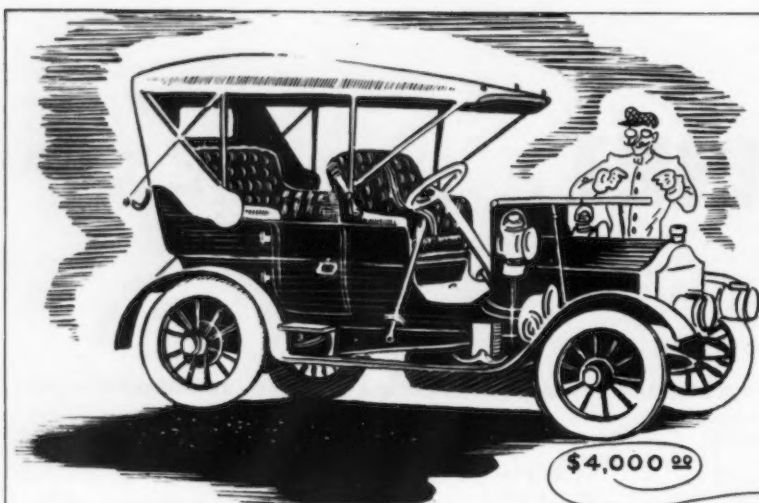
reorganization, which has received the approval of the United States District Court at New Haven, Conn., was developed by George L. Sexton, president of the old company, in cooperation with the Aetna Industrial Corp., New York, industrial engineering concern.

Mr. Sexton will remain as president and general manager of the new organization. It is announced also that the active personnel of the old company will continue. The Aetna Industrial Corp. will serve in an advisory capacity.

The Automatic Machine Co. was established in 1896 to manufacture wire forming machinery. Additional lines have been added, including boring machines using diamonds and cemented carbides, thread hobbing machines, profilers, hydraulic and automatic threading lathes, cam milling machines, automatic valve body and wedge facing machines and open-side shaper-planers.

The new corporation will further

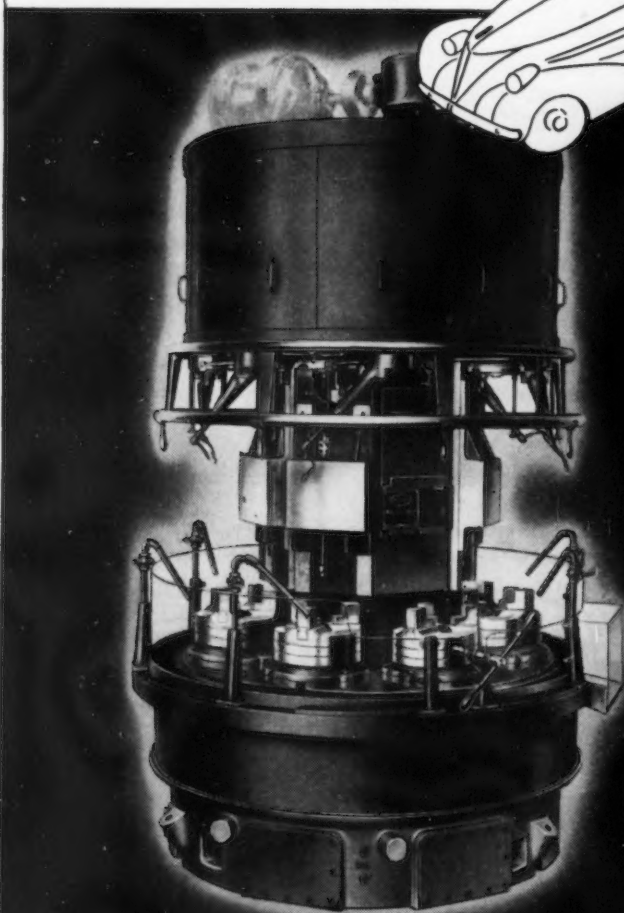




**This was a fine  
car in its day --**

*today more efficient transportation  
has replaced it*

**LIKEWISE MACHINE  
EQUIPMENT MUST BE  
REPLACED BY NEWER  
MORE EFFICIENT UNITS**



**J**UST the fact that this fine car sold for \$4,000 in its day is not alone significant of anything. However, today better cars mechanically with luxury appointments and greater operating efficiency are made to sell for 1/3 of the 1907 prices.

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develop and expand its lines of equipment and will conduct an aggressive sales and engineering campaign.

## TRADE NOTES

**John Simmons Co.**, plumbing supply and pipe jobber, New York, has leased a part of the building at 304 Hudson Street and will move its warehouse and showrooms to that location. Its building in Long Island City was recently sold.

**Iron & Steel Products, Inc.**, Chicago, has discontinued its New York sales office. For the time being that territory will be handled from Chicago.

**Detroit Rex Products Co.**, Detroit, manufacturer of degreasing machines, solvents, cleaners and strippers, has opened a branch office at 5905 Pacific Boulevard, Huntington Park, Cal., to serve the Southwest section of the United States. A warehouse located at Los Angeles will carry ample stocks.

**Black & Decker Mfg. Co.**, Towson, Md., has established a factory service branch at 935 N. Illinois Street, Indianapolis, Ind., where a complete stock of replacement parts for all Black & Decker tools will be carried. H. F. Linder is service representative at Indianapolis and M. D. Mooers, of the sales department, will make this his headquarters.

**Sheffer-Gross Co.**, Drexel Building, Philadelphia, has been appointed representative for eastern Pennsylvania by the American District Steam Co., North Tonawanda, N. Y., manufacturer of expansion joints, tile conduit, meters, water heaters, etc.

**Sullivan Machinery Co.**, maker of air and gas compressors, drilling and mining machinery is moving its general offices from Chicago to Michigan City, Ind. The Chicago office will remain at the former address, 307 North Michigan Avenue. The company operates plants in Michigan City and Claremont, N. H., with additional facilities in Canada and England.

**Harnischfeger Corp.**, Milwaukee, has appointed the Constructors Supply Co., Inc., Durham, N. C., as exclusive excavator agent for the entire state, and it will also represent the P&H line of welders and hoists on a non-exclusive basis. The North Carolina Equipment Co., Raleigh, N. C., will handle the sale of P&H hoists and welders on a non-exclusive basis.

**High Speed Hammer Co., Inc.**, Rochester, N. Y., maker of "High Speed" riveting machinery and precision drilling machines, announces the appointment of the E. L. Essley Machinery Co. as its exclusive representative in western Michigan, Illinois, Wisconsin, Iowa and Nebraska.

**Dravo Corp.**, Pittsburgh, has received an order from the United Shipyards, Inc., crane plant, Brooklyn, for the construction of six special barge transfer trucks.

**R. & M. Mfg. Co.**, 5680 Twelfth Street, Detroit, has moved into a new building at 410 East Fifth Street, Royal Oak, Mich.

**Mechanics Universal Joint Co.**, a Borg-Warner subsidiary, has moved from its old plant to a new half-million dollar structure at Rockford, Ill. Although 45 days has been estimated as necessary for completion of this project, operations will continue as usual in both new and old plants.

**Fansteel Metallurgical Corp.**, North Chicago, Ill., has appointed Michigan Tool Co., Detroit, Mich., as sales representative for Tantaloy hard-cutting metal and Tantaloy tipped tools.

**Concrete Reinforcing Steel Institute** and the **Steel Joist Institute** have moved from 201 North Wells Street, Chicago, to the Builders Building, Chicago.

**Independent Pneumatic Tool Co.**, Chicago, announces the opening of a new sales-service branch at 6200 E. Slauson Avenue, Los Angeles, in charge of B. J. Herron who started with the company 18 years ago as a salesman in Pittsburgh.

**Wailles Dove-Hermiston Corp.**, New York, has appointed Central Supply Co., Indianapolis; The Doermann-Rocher Co., Cincinnati; the P. B. Gast & Sons Co., Grand Rapids, Mich., and The Shaw-Kendall Engineering Co., Toledo, as distributors of the Bitumastic line of industrial protective coatings.

**General Spring Co.** has moved into its new plant at 1642 Herald Avenue, Cincinnati.

**A. F. Holden Co.**, New Haven, Conn., has appointed the James H. Knapp Co., 4920 Loma Vista Avenue, Los Angeles, as its representative in California.

**Igoe Brothers, Inc.**, with warehouses in Brooklyn, New York, Jamaica, Newark and Asbury Park, N. J., have been appointed distributors of Stran-Steel in the Metropolitan area, by Stran-Steel Division of the Great Lakes Steel Corp., a unit of National Steel Corp. Igoe Brothers, Inc., will maintain a stock of complete Stran-Steel framing.

## Porcelain Enamel Meetings Scheduled

THE eighth annual meeting of the Porcelain Enamel Institute will be held in Cleveland, Oct. 25 and 26, 1938. An extensive program is being prepared to interest manufacturers of sheet steel, chemicals for enamel preparation, and enameled products. Discussion of porcelain-enamel's use in architecture will be included in the program.

The third annual Porcelain Enamel Institute forum will be held at the University of Illinois, Urbana, Ill., Oct. 12 to 14, 1938. This forum is devoted entirely to problems of the shop man in the porcelain enameling industry.

Proceedings of the second forum of the institute held in October, 1937, have been mailed to all persons in attendance at the forum and to all members of the institute. All phases of enamel shop work were covered by the 20 papers heard at this meeting. Copies are available at \$2 each from the Porcelain Enamel Institute, Inc., 612 North Michigan Avenue, Chicago.

## OUT OUR WAY

BY J. R. WILLIAMS





# THIS WEEK IN WASHINGTON

**... Senate-House committee retains undistributed profits tax principle, supports changes in capital gains levy ...  
Navy opposes Wagner-Healey bill as bidders on Government business dwindle ... SWOC contract sought in Labor Board hearings.**

By L. W. MOFFETT  
Resident Washington Editor  
The Iron Age

o o o

WASHINGTON.—Capitulating to White House demands for retention of the undistributed profits tax principle in the new revenue bill, but standing firm on the Senate modifications of the capital gains levy, Congressional conferees, deadlocked for eight days in an effort to effect a compromise, voted last week on a measure which would apply to corporate incomes for the calendar years 1938 and 1939 after which Congress would have to reopen the question.

The approved bill provides that corporations earning more than \$25,000 annually pay a 16.5 per cent tax plus a tax of 2.5 per cent on the undistributed profits. Essentially, this amounts to a flat rate of 19 per cent with a credit of 2.5 per cent on the amount of earnings paid out in dividends, according to some tax experts. The House draft called for a 16 per cent tax plus a 4 per cent levy on undivided profits while the Senate bill would have abolished the undistributed profits tax, levying a flat 18 per cent on corporation profits.

## Victory for Harrison

Capital gains held less than 18 months will be taxed as ordinary income under the bill approved by Senate-House conferees, while long-term gains will be taxed at a flat rate of 20 per cent if their assets are held less than two years and 15 per cent if held more than that period. This was regarded as a victory for the Harrison

committee since the House bill would have retained the present method of taxing capital gains on a graduated scale. The Senate draft had provided for a flat rate of 15 per cent on gains from assets held more than 18 months.

Senate Finance Committee Chairman Harrison, who had previously indicated his intention of standing firm on the elimination of the undistributed profits tax despite White House pressure, called the proposal "the best compromise that could be effected." Senate conferees said they believed the agreement would meet most of the objections to the undistributed profits tax.

## Byrnes Leads Fight

Shortly before the conferees reached an agreement, the Senate Committee on Unemployment and Relief called for repeal of the undistributed profits tax as a major attempt to relieve "the critical unemployment problem." While this action apparently did not appreciably fortify the Finance Committee's battle to strike out the tax, significance was attached to the action since its chairman, Senator Byrnes, of South Carolina, led the President's fight in the Senate to obtain enactment of the Government reorganization bill.

Surprise was expressed in some quarters that Byrnes had gone to such lengths in opposing the White House on the matter of tax revision. Byrnes himself drafted the report which he described as a "preliminary" one.

Reporting that industrial opinion registered before it had favored the Senate tax bill as a method of encouraging capital to expand industry and provide jobs, the committee said the step would be "exceedingly helpful at this time." It expressed doubt that repeal of the undistributed profits tax would mean a permanent cure for the unemployment problem, but promised to go into the complexities of

the case further before reporting to the Senate in detail.

Other features of the report also ran counter to the Administration's recognized policies for handling the unemployment relief problem. The Byrnes committee proposed a six-point program covering relief administration and estimated that about 14 per cent of the population are "beneficiaries of one kind of public aid or another" and that 2,000,000 additional persons had lost their jobs since the unemployment census was taken in November.

The House Labor Committee had its own ideas last week about halting the "alarming sharp decline in business activity." Wrestling for months over the problem of drafting a wage-hour bill to meet all objections, the committee reported on a new bill which it said would go far toward preventing "a vicious spiral of deflation." The measure would fix a graduated minimum wage, starting at 25 cents an hour and ranging up to 40 cents at the end of three years. Hours would decrease over a similar period from 44 to 40 a week.

## NLRB Orders Anti-CIO Organization Dissolved

WASHINGTON.—The National Labor Relations Board has ordered the dissolution of the Independent Union of Falk Employees at the Falk Corp., Milwaukee manufacturers of steel castings, but at the same time dismissed a CIO petition which charged that the company had refused to bargain collectively.

The board also scheduled two elections, although it fixed no dates, for workers to vote either for or against the CIO's Amalgamated Association of Iron, Steel & Tin Workers union. Power house employees and steam locomotive crane workers will choose between the CIO union and the AFL's International Union of Operating Engineers.

If the CIO group wins both elections, the NLRB said, it will be certified as the representative of both groups of workers as a single unit. Otherwise each group will be considered a separate bargaining unit.



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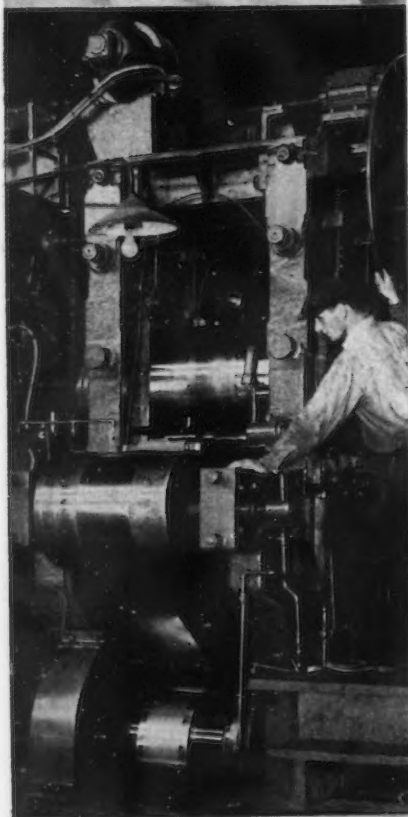
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CANTON, OHIO.

## Bethlehem Asks NLRB Admit SWOC Contract As Evidence

WASHINGTON. — Challenging the authority of Trial Examiner Frank Bloom of the National Labor Relations Board to deny admission of the United States Steel Corp.-SWOC contract as evidence in the board's case against the Bethlehem Steel Co.'s Employees' Representation Plan at its Cambria plant, the company last Thursday petitioned the board to set the ruling aside.

The company on April 13 filed an application for a subpoena to be directed to David J. McDonald, SWOC secretary-treasurer, to appear at the hearing in Johnstown, Pa., and bring with him every agreement entered into since Jan. 1, 1937, by SWOC with the United States Steel Corp., or its subsidiaries.

### Denies Domination

Bethlehem's purpose is to compare methods of collective bargaining under the SWOC contract and the Employees' Representation Plan, and thus to prove that the company does not dominate the plan. Said the petition:

"It is submitted that for the trial examiner or the board to say that, in passing upon the legality of the Plan of Employees' Representation in force at respondent's Cambria plant, it is clearly not relevant to compare the provisions of said plan with the provisions of other collective bargaining agreements, including the very one which the complainant is endeavoring

to obtain by means of an order destroying the plan, is in effect to prejudge the case; is to say that said plan must be condemned even though it is identical in every way with the method of collective bargaining which the complainant seeks to substitute for it."

The petition said the company believes that a finding that it dominates, interferes with or supports the Employees' Representation Plan, must be based, if at all, upon findings of some technical defects in the procedures provided by the plan, which might indicate a measure of "support" contrary to the National Labor Relations Act, or satisfy the board that domination or interference by the company might result from the existence of some provision in or absence of some provision from the plan.

Pointing out that the NLRB in its recent Republic Steel Corp. decision referred to the SWOC agreement as the "standard collective bargaining contract" the petition said that the agreement, taken with testimony as to its construction, should also throw light on the provisions of the Employees' Representation Plan and assist the board in interpreting such provisions. Also it was stated it should assist in determining whether the plan lacks any provision ordinarily found in collective bargaining agreements or contains any provisions inappropriate to agreements of that sort.

## Navy Opposes Bill Empowering NLRB to Cancel U.S. Contracts

WASHINGTON. — Expressing growing concern over the dwindling number of companies submitting Government bids and the increasing number of stipulations appearing in naval contracts, the Navy Department has gone on record as opposed to the Wagner-Healey bill which would empower the Labor Board to cancel Government contracts held by firms charged with violation of the labor relations law.

Although tempering its objections by registering approval of the bill's purposes—tightening up the enforcement machinery of the labor relations law—the department, in a letter to the Senate Labor Committee signed by

Admiral William D. Leahy, chief of naval operations, said such a restriction "might lead to serious irrecoverable delay" in the construction of war vessels and delivery of naval armament, equipment and supplies.

### Navy Already Hampered

"Naval contracts are already overburdened with stipulations and covenants to such an extent that the Navy's work is hampered," the letter said. "The increase in the number of laws that involve added complexity in Government contracts is a source of grave concern."

The department's action was interpreted in some quarters as presaging



Navy Department opposition to the Treasury's recent order requiring cement bidders to quote hereafter on an f.o.b. mill basis—a move regarded as an attempt to break up the basing point system of quoting prices not only in the cement industry but every other industry employing the system. It also would further complicate contract forms and further discourage bidders as it did recently when six of the larger cement manufacturers declined to submit bids for Government business advertised by the Procurement Division. Present Army and Navy contracts are not handled by the Treasury's Procurement Division but there have been reports that the division may be given broadened jurisdiction over Government purchases.

#### Orders Not Highly Desirable

Capt. D. B. Wainwright, chief of the Navy Department's supply corps, told a House Judiciary sub-committee last week that possible cancellation of contracts and resultant stoppage of ship construction could not be tolerated and that the bill would add another stipulation to contracts already overburdened by Walsh-Healey restrictions and others.

He said that at best Navy orders are not considered by most companies to be extremely desirable and that additional contract restrictions would only be a further deterrent for companies bidding, especially to the smaller firm. He recognized that orders for steel plates and sheets, for example, taper off toward the end of a ship construction job and make it difficult for companies keyed to volume production to turn out special order work.

Lee Pressman, CIO general counsel, described the bill as a most effective weapon in obtaining compliance with the Wagner law since the Government's purchases, covering a wide variety of products, amount to some \$400,000,000 annually.

The CIO spokesmen also insisted on the retention of section 5 which he described as "the heart of the bill." It is this section to which William Green has taken exception, holding that the NLRB, if empowered under the section to determine violation of the law, might exercise its alleged CIO bias and favor the Lewis union over the AFL.

The Navy Department's opposition plus Green's stand is regarded as sufficient to block passage of the bill, although there is considerable sentiment in Congress favoring enactment. A recent poll in the Senate showed that 55 favored the bill, 45 opposed, and 21 were uncertain.



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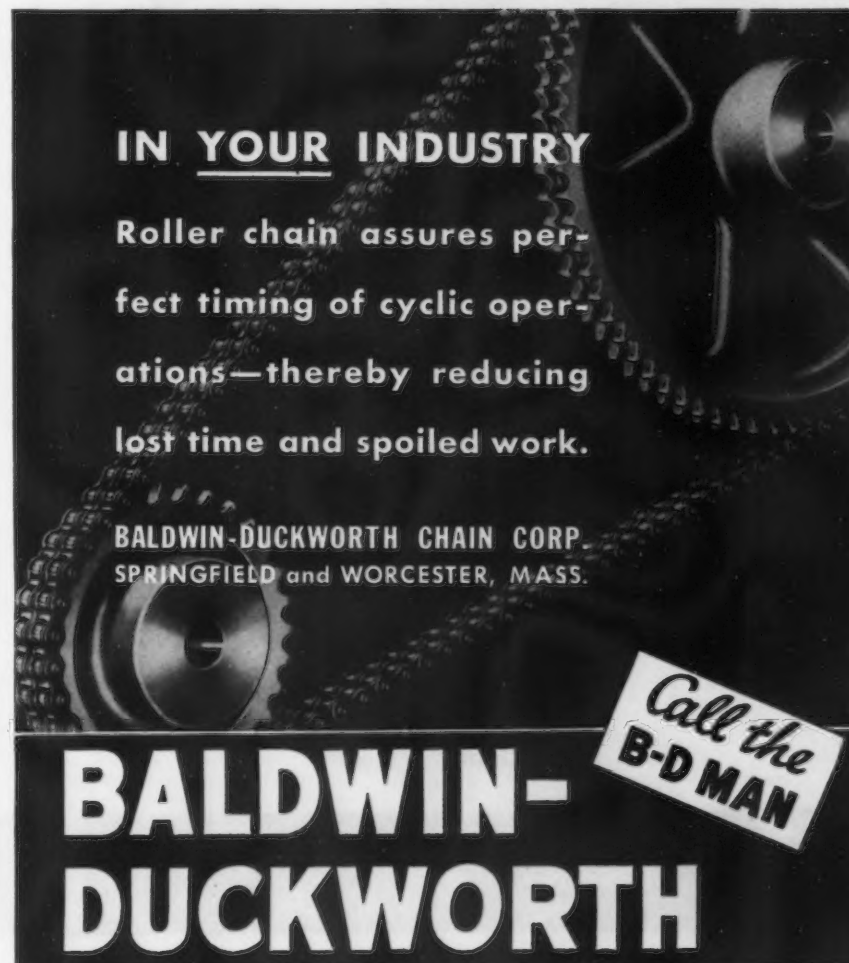
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## \$173,264,000 Steel Outlay Possibility Under New PWA

**W**ASHINGTON.—Should Congress approve President Roosevelt's recommendation that the Public Works Administration be granted \$1,000,000,000, it is estimated that if PWA funds were disbursed for materials in the same ratio as they were expended during the four-year

period, July, 1933-June 15, 1937, the outlay for iron and steel products would be \$173,264,000. On the same basis expenditures for machinery and foundry would total about \$112,000,000.

While these purchases would have a stimulating effect in these durable

goods lines and employment, it would not be substantial and definitely would be only a temporary expedient which, if its purpose is to be served—that of beating the "recession"—must be supplemented by means to restore business confidence.

PWA expenditures for iron and steel products in the July 15, 1933-June, 1937, period, according to revised figures, aggregated \$467,682,552. Similar expenditures for machinery, exclusive of transportation equipment, totaled \$296,198,519. The PWA outlay for steel represented only about 6 per cent to total sales. PWA expenditures under present conditions might reflect a larger percentage of total sales for two particular reasons: (1) the low rate of operations and (2) the plan to distribute allotments within the next six months.

### Where Steel Might Go

Based on former PWA expenditures outlays of a \$1,000,000,000 fund for iron and steel and equipment lines may be roughly broken down as follows:

Structural and reinforcing steel .....	\$61,550,000
Other rolling mill products, n.e.c. ....	34,600,000
Heating and ventilating equipment .....	4,000,000
Cast iron pipe and fittings...	17,300,000
Miscellaneous remanufactured iron and steel products....	55,814,000
Foundry and machine products .....	67,000,000
Electrical machinery and appliances .....	28,000,000
Engines, turbines, tractors, etc. ....	10,000,000
Pumps and pumping equipment .....	7,800,000

Under this calculation the man-hours required in steel production would be 95,000,000, while in machinery production man-hours would total 61,000,000.

### Third for Labor

Of the total PWA expenditures of \$2,682,373,568 during the four-year period 36.3 per cent went for labor and 63.7 per cent for materials.

Eager to "sell" PWA spending as opposition to the program arises both from the public and a group in Congress, Administrator Harold L. Ickes has announced that PWA is prepared to finance nearly 3000 projects said to be held in reserve.

Part of the opposition to the PWA spending spree arises from the fact that the Reconstruction Finance Corporation Act was recently expanded with \$1,500,000,000 made available to advance funds for public works.



## No Shadow Boxing

When we meet a plant executive in charge of metal finishing who believes (to a certain extent) in "letting well enough alone", even though certain needs are still un-satisfied, it is nearly always for the reason that he has had to work out his problems without much help, and he dreads what he calls "an experiment".

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Wyandotte Service Representatives are in all parts of U.S.A. and Canada. District Offices in 28 Cities.





Senator Glass, Democrat of Virginia, has criticized the President's proposed \$1,000,000,000 PWA fund as a duplication of the RFC activities, which were broadened through an amendment the Virginia Senator sponsored.

"I offered my bill to try to head off this sort of thing," Senator Glass said. "I never would have offered it if I thought the public works fund would be requested too. It will mean duplication. There will be spending by two agencies. The only difference is that one will be on a business basis and will recover the money, while the other will give it away."

#### Favored by Public

Because it is a 100 per cent lending organization, based on sound business principles, rather than a political handout agency, such as the PWA is, the RFC finds much more favor in the public eye than does the Ickes organization. Further, it has been a much more effective factor in promoting solid recovery than has PWA. For this reason it is still looked to as much more promising as a "recession" cushion than is PWA. Especially important have been large railroad equipment orders made through RFC loans in stimulating the iron and steel, metal-working machinery, and other heavy industries. However, unless traffic conditions improve considerably it is doubted that the railroads will be greatly interested in obtaining RFC loans to purchase equipment, despite Administration recommendation that \$300,000,000 be provided for the purpose.

#### Metal Society Chapters in Ohio Hold Annual Meeting

CLEVELAND.—The annual tri-chapter meeting of the Dayton, Cincinnati and Columbus chapters, American Society for Metals, was held at Dayton, April 27, with papers dealing with the general subject of corrosion. G. H. Cole and Dr. W. A. Pennington, American Rolling Mill Co., were chairmen of the morning and afternoon sessions, respectively. The program included a paper, "The Planning and Interpretation of Corrosion Tests," by C. W. Borgman, National Tube Co., Pittsburgh; "Rustless and Stainless Steels," by Dr. V. N. Krivobok, Carnegie Institute of Technology, Pittsburgh; "Engineering Applications of Corrosion Test Data," by R. F. Passano, American Rolling Mill Co., and "Low Alloy Corrosion Resisting Steels," by Dr. H. J. French, International Nickel Co.

## Steel Exports in March Show Lower Tonnage; Scrap Outgo Heavy

WASHINGTON.—Exports of iron and steel products (excluding scrap) from the United States in March amounted to 188,235 gross tons valued at \$13,991,641 in comparison with 203,850 tons valued at \$12,643,356 in the preceding

month, and 208,302 tons valued at \$13,844,092 in March 1937, according to a preliminary report released by the Commerce Department's Metals and Minerals Division.

American exports to Europe in March fell 64 per cent below the



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Every large steel company is saving with Goodrich tanks, many of them in continuous use for years. The first successful rubber-lined continuous strip pickling tank ever built was a Goodrich tank which has been in service at Inland Steel for nearly 5 years without a penny of repair expense.

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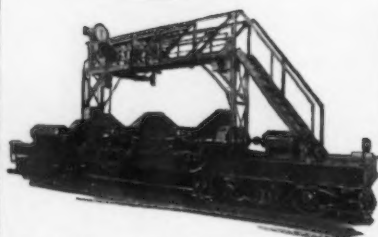
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February figure. Until recent months, the European iron and steel situation was difficult in light of rising prices, shortage of raw materials, a sharply augmented home consumption, and the efforts made to maintain export markets. Consequently, European imports of iron and steel items from the United States (notably pig iron, steel ingots, and plate) increased very substantially.

### Pressure Lessens

Since shortly after the opening of 1938, the stringency in the European iron and steel supply has eased to a noticeable extent. Raw materials have become more plentiful and this, combined with the less urgent demands from the local market, has permitted the European producers to better supply home consumption, hence the lower imports from the United States.

Despite the fact that the March volume was 7.7 per cent lower than in February, the value of this trade

registered a 10.7 per cent increase because shipments were heavier in the higher-priced products, the Metals and Minerals Division said.

### Scrap Exports Heavy

March exports of scrap totaled 338,648 tons valued at \$5,530,042 in comparison with 256,790 tons valued at \$4,422,078 in the preceding month and 362,249 tons valued at \$6,735,381 in the corresponding month of 1937. Shipments during the first three months aggregated 951,975 tons valued at \$16,017,972 against 586,369 tons valued at \$10,484,514 in the like months of last year. The leading markets in the first quarter were the United Kingdom, 288,950 tons against 53,006 tons last year; Japan, 265,645 tons against 334,788 tons; the Netherlands, 100,138 tons against 2294 tons; Italy, 94,061 tons against 84,350 tons; Poland, 81,493 tons against 20,263 tons; and Germany, 54,838 tons against 9745 tons.

## Institute Adds Commercial Session to May 26 Meeting

THE American Iron and Steel Institute has added a commercial session to the program for its 47th general meeting, to be held May 26 at the Waldorf-Astoria Hotel in New York. Selling and other commercial problems will be discussed at this session, which will be held in the afternoon.

The program includes a morning session, informal luncheon, technical session in the afternoon, and banquet in the evening. Attendance at all sessions will be restricted to individual members of the institute.

T. M. Girdler, chairman of Republic Steel Corp. and president of the institute, will preside at the morning session and will deliver the opening address. Other speakers will be William A. Irvin, vice-chairman of United States Steel Corp., and Ernest T. Weir, chairman of National Steel Corp., both institute vice-presidents.

Walter E. Watson, vice-president of the Youngstown Sheet & Tube Co., will be chairman at the commercial session in which speakers will be R. E. Zimmerman, vice-president of United States Steel Corp., "Coupling Sales to Research;" W. B. Gillies, vice-president of the Youngstown Sheet & Tube Co., "Promoting Demand Through Improving Quality," and N. J. Clarke, vice-president of Republic Steel Corp., "The Problem of the Small Order."

Four papers will be read at the technical session, at which Wilfred Sykes, assistant to the president of Inland Steel Co., will serve as chairman. The authors and their subjects will be J. T. Whiting, vice-president of Alan Wood Steel Co., "Microscopic and Petrographic Studies of Blast Furnace Materials;" H. W. Johnson, superintendent of the blast furnace department of Inland Steel Co., "The Peripheral Distribution of Gases in the Blast Furnace;" H. W. Graham, general metallurgist, and H. K. Work, director of research, both of Jones & Laughlin Steel Corp., "Effects of Variation in Pig Iron on Quality of Steel," and Richard S. McCaffery, professor of mining and metallurgy, University of Wisconsin, "A Study of Blast Furnace Slags."

## Budd Sales 42% Of 1937 First Quarter

Budd Wheel Co. reports a loss of \$195,960.75 for the first quarter of the current year and shows sales for the first quarter of 1938 were 42 per cent of sales for the first quarter of the previous year, reflecting decreased activity in the automobile industry.

## A. S. T. M. Organizes Radiographic Group

SINCE the symposium on radiography and x-ray diffraction methods sponsored by the American Society for Testing Materials in 1936, there has been evident an increasing interest in the need for research and standardization work on important problems in the field of radiographic testing. In order to carry out work in this field the A.S.T.M. has organized a new committee, designated as E-7, which will deal with radiographic testing. The new committee will extend phases of the work heretofore carried out by committee E-4 on metallography. Under the leadership of Dr. H. H. Lester, Watertown Arsenal, the committee was formally organized on Feb. 14 at a meeting held in New York City, at which a large number of those invited to serve on the committee were present.

The six subcommittees which are being appointed, together with the chairmen who will direct their work are indicated in the following list:

Subcommittee I on Radiography of Cast Metal—C. W. Briggs, American Foundrymen's Association.

Subcommittee II on Technical Research—H. E. Seemann, Eastman Kodak Co.

Subcommittee III on Radiography of Welds and Weldments—H. H. Lester (temporary chairman), Watertown Arsenal.

Subcommittee IV on Correlated Abstracts—W. P. Davey, Pennsylvania State College.

Subcommittee V on Safety—E. W. Page, General Electric X-Ray Corp.

Subcommittee VI on Programs—Lars Thomassen, University of Michigan.

## Otis Steel Co. Drops Prior Preference Shares

CLEVELAND.—Shareholders of Otis Steel Co., Cleveland, have amended the company's articles of incorporation to eliminate the prior preference stock heretofore outstanding, all of which has now been retired.

The company reported net loss of \$297,379 for the first quarter of 1938 after a depreciation charge of \$270,000, compared with a profit of \$702,396 for the first quarter of 1937. Directors declared the quarterly dividend on the convertible first preferred stock, payable June 15 to shareholders of record June 1, 1938.

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• A complete list of sizes of Cleveland Cap Screws in both American fine and coarse threads is stocked at all times in our four warehouses and the factory—in cartons, and in kegs, ready to ship you. All are made by the Kaufman Process, patented, which means that extra strength and accuracy of fit goes into every cap screw you get from us. A Class 3 fit is standard. All of our cap screws are full finished—from head to point—washer faces are flat and true. Ask for samples, and send for Catalog E and price list. THE CLEVELAND CAP SCREW COMPANY, 2929 East 79th Street, Cleveland, Ohio.

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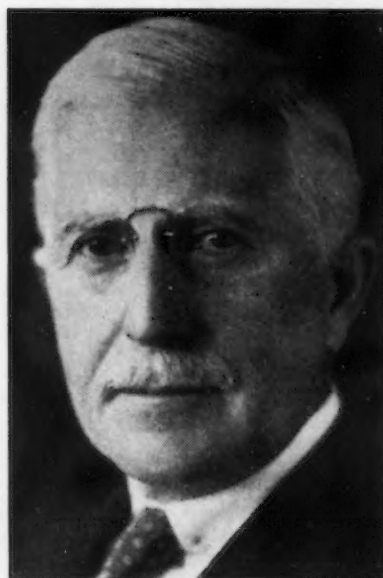
# ... NEWS OF THE WEEK ...

## George M. Verity Celebrates 50 Years in Steel Business

**G**EORGE M. VERITY, chairman of the board of the American Rolling Mill Co., Middletown, Ohio, celebrated his 50th anniversary in the steel business on April 21. His service with the American Rolling Mill Co. as president and subsequently as chairman has extended over a period of 38 years, which is said to be the longest continuous record of any man now living in an executive capacity with one major steel company. Mr. Verity became connected with the steel business in 1888 as manager of the Sagendorph Iron Roofing & Corrugating Co., Cincinnati.

As his 50th anniversary coincided with Armco's annual stockholders' meeting, Mr. Verity took the occasion to review briefly the developments that have come during his business career. When he started in business in 1888 the telephone was just coming into use, the incandescent lamp had barely "emerged from the candle-light," the airplane, the radio and the wireless telephone were not even a remote dream.

Mr. Verity stressed the importance of the development of the continuous sheet rolling mill, in which his company pioneered, in improving the



GEORGE M. VERITY

quality of flat rolled products. The best sheet that could be made 15-years ago, he said, would today be a "second" when compared with the product of the continuous mill. "It is an outstanding fact," he said, "that while

quality has gone up costs have come down. In 1923, sheets used to make auto fenders sold for an average of \$125 per ton. In 1937, the average price was \$68 per ton. The average price of all automobile sheets declined from \$101 in 1927 to \$68 in 1937. This is one of the reasons you can buy a high grade car today for much less than you could one of mediocre quality 10 years ago."

The average steel mill worker 38 years ago had an annual income of \$550; in 1937 the average was \$1,570, Mr. Verity said. Due to production incentives it has been possible for Armco men to average about \$200 a year more than the average for the industry, he said.

Looking ahead, Mr. Verity predicted that air conditioning might outstrip the automobile industry in another decade or two.

### "Verity Oak" Planted

More than 500 Armco employees gathered outside Mr. Verity's office window on April 21 to plant an oak tree there in honor of his anniversary. The first shovels full of earth were turned by Charles R. Hook, president, and Calvin Verity, executive vice-

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president. The tree, which will be known as the "Verity Oak," was presented by Jack Wilson, chairman of the employees' committee. Speaking to Mr. Verity, Mr. Wilson in making the presentation said:

"You have transplanted into the corporation which you organized the qualities of the sturdy oak. Your un-failing consideration for us all, your generosity, and your reputation for fair and square dealing has won the outstanding respect of all your associates in Armco and throughout the country, just as the oak is outstanding in the forest."

### R B & W Now Making Recessed Head Screws

THE Russell, Burdsall & Ward Bolt and Nut Co., with plants at Port Chester, N. Y., Coraopolis, Pa., and Rock Falls, Ill., has taken a license under the Phillips recessed head screw patents of the American Screw Co., Providence, R. I.

## Management Group Told Cycle Of Prosperity Is Year Away

"THE present depression has pretty well spent itself and current adjustments are more of a leveling off nature," E. C. Bratt, Lehigh University professor, told 800 American Management Association members at Pittsburgh last week.

"Consumption is partly from inventories and shortly production must step up to meet consumption," he said. He declared that there is need for durable goods of new types and there exists a tremendous pent-up demand for capital goods which was not satisfied during the recovery period of 1936-37. It was his opinion that it would take at least a year to correct maladjustments before any prosperity cycle is well under way.

Prof. Bratt told his audience that the 1936-37 prosperity period received its main impetus from Government spending and that other factors included inventory accumulations driven

on by higher price fears and large scale installment buying of automobiles.

### Many Subjects Discussed

The meeting, a virtual merry-go-round of current production problems, included discussions on "The Human Element in Production," "Latest Developments in Training Employees," "Gearing Operations to Quick Changes" and "Analyses of Wage Payments."

"No man has the ability to run a sizable business on a one-man basis but should have the help of every individual in the management," Charles P. McCormick, president McCormick & Co., Baltimore, told members while discussing "Developing Junior Executives." He explained how he has made use of the abilities and ideas of his four-board system, which consists of a junior executive board, a factory

## TO MANUFACTURERS interested in EXPORT TRADE

For thirty years we have acted as a complete Export Department for a limited number of manufacturers.

We assume all expenses of selling, advertising, travelling and correspondence. We pay cash to our principals and extend credit facilities to our foreign clients. All selling is done in the name of the manufacturer through our own offices and representatives abroad.

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Care The Iron Age, 239 W. 39th St., New York

executive board, and a sales board, all supplementing the senior board of directors. Mr. McCormick said that this plan of "multiple management" which has been in operation in his firm since 1932 "offers a common ground for complete understanding between employer and employees by harmonizing their interests."

#### Questioned Its Employees

J. J. Evans, Jr., personnel manager, Armstrong Cork Co., said "every

company should have up-to-the-minute information about what workers really think so that a sound labor policy may be established and maintained." To secure such information, the Armstrong Cork Co. issued questionnaire booklets to each employee.

In covering payment of wages by the year from a personnel management standpoint, Harold B. Bergen, McKinsey, Wellington & Co., New York, suggested the establishment of a so-called permanent force of work-

men to take care of the minimum production schedule. The minimum force required might be placed on a straight salary basis and the additional so-called temporary employees which may be found necessary could be put on an hourly basis, the speaker said.

In cases where seasonal peaks cannot be avoided, Mr. Bergen suggested an agreement with employees should provide that certain maximum longer hours may be worked without overtime for a limited number of weeks during the busy season and shorter hours during the slack periods. Annual earnings can be estimated, he said, and divided into 52 weeks of equal payments, including the vacation period.

#### Pay for Displaced Workers

Technological changes should be anticipated and the adjustments of employees to be displaced planned on a long range basis, the speaker warned. In case displaced workers cannot be absorbed elsewhere in the company an adequate dismissal compensation plan should be agreed upon with the employees to supplement state unemployment benefits, Mr. Bergen said. Other necessary factors in attempting annual wage payments such as budgetary control, improved sales management and production control, were discussed.

Other speakers were B. H. Lytle, manager, East Pittsburgh Feeder Division, Westinghouse Electric & Mfg. Co., D. W. Weed, General Electric Co., Schenectady, N. Y., and E. R. Weidlein, director, Mellon Institute of Industrial Research, Pittsburgh. Chairmen of the various sessions included Earl M. Richards, assistant to vice-president in charge of operations, Republic Steel Corp., Cleveland, and C. S. Craigmile, vice-president, Belden Mfg. Co., Chicago.

#### Malleable Castings Output 688,000 Tons in 1937

CLEVELAND. — Production of malleable iron castings in the United States during 1937 showed the greatest volume since 1929, totaling about 688,000 tons, according to the Malleable Founders' Society.

Operations averaged 61.5 per cent of capacity during the year. Automotive manufacture absorbed 54 per cent of the tonnage, railroads 8 per cent, and miscellaneous 38 per cent.

## IT PAYS TO CONSULT A SPECIALIST

**THE STEEL MANUFACTURER GAINS HIS FAME THRU SPECIALIZATION**

The road to fame is through specialization—it's a long, hard and exacting trek with no time out for the exploration of by-paths. It's a matter of uncompromising concentration.

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## Warehouse Chapters Elect New Officers

**T**HE American Steel Warehouse Association recently elected the following officers:

Missouri Valley chapter: President, Henry Neff, Gate City Iron Works, Omaha, Neb.; first vice-president, H. J. LaFrenz, Nichols Wire, Sheet & Hardware Co., Kansas City, Mo.; second vice-president, J. L. Snowden, Drake-Williams-Mount Co., Omaha; secretary-treasurer, F. L. Evans, Steel Mfg. & Warehouse Co., Kansas City. Mr. Neff will also serve as national director.

Northern California chapter: President, Harry Levitt, Dunham, Carrigan & Hayden Co., San Francisco; first vice-president, A. U. Good, Pacific Steel Sales Corp., Oakland; second vice-president, M. S. Donaldson, A. M. Castle & Co., Oakland; secretary, R. D. Cartelyou, San Francisco. Mr. Levitt will also serve as national director.

Connecticut chapter: President and national director, R. B. Shearer, C. S. Mersick & Co., New Haven; vice-president, B. R. Dwyer, L. L. Ensworth & Son, Inc., Hartford; secretary-treasurer, G. S. Brousse, C. S. Mersick & Co., New Haven.

New England chapter: President, H. C. Wills, Jos. T. Ryerson & Son, Inc., Cambridge; vice-presidents, Murray C. Harvey, Arthur C. Harvey Co., Allston, and Quincy W. Wales, Brown-Wales Co., Boston; secretary-treasurer, F. D. Avery, Avery & Saul Co., Boston; national director, Richmond Lewis, Charles C. Lewis Co., Springfield.

Southern California chapter: President, E. Jungquist, Percival Steel & Supply Co.; vice-president, John Robertson, A. M. Castle & Co., and Donald Priest, Los Angeles Heavy Hardware Co.; secretary-treasurer, L. B. Yeaton; all of Los Angeles. Mr. Jungquist will also serve as national director.

Northern Ohio: President, H. H. Kuhn, Hardware & Supply Co., Akron; vice-president, F. A. Michell, S.A.E. Steels, Cleveland; secretary, J. Lehman, Republic Structural Iron Works, Cleveland; national director, Harry Hamilton, Hamilton Steel Co., Cleveland.

New York Chapter: President, Lester Brion, Peter A. Frasse & Co., Inc.; vice-presidents, Harry L. Edgcomb, Edgcomb Steel Corp., Newark, N. J., and H. B. Ressler, Jos. T. Ryerson & Son, Inc., Jersey City; secretary-treasurer, Charles Kramer, Scully Steel Products Co., Newark, N. J. Mr. Brion will also serve as national director.

## First Stainless Steel Airplane in Good Condition

The first stainless steel airplane, which was built six years ago, is still in good structural condition, according to engineers of the Edward G. Budd Mfg. Co., Philadelphia. The plane has been subjected to rigorous atmospheric tests. For the past three years it has been on exhibition in front of the Franklin Institute in Philadelphia, exposed to rain, snow, dust and other atmospheric conditions. Before being placed on exhibition it was stripped of all fabric covering so that the effects of weather on the metal would have full play. Recently the ship was dismantled and all parts engineers and metallurgists, who were thoroughly inspected by Budd found no signs of deterioration.

## Mullins Sells Steel Tile Patents, Equipment

**C**LEVELAND. — Youngstown Pressed Steel Co., Warren, Ohio, division of Mullins Mfg. Corp., has sold the patents and equipment for the manufacture of its porcelain-enameled steel tile to northwestern Ohio interests. The product, known as "Veos," will be manufactured in the plant of the Davidson Enameling

Co. at Clyde, Ohio. The sale was effective April 15, but the Warren plant has temporarily been making tile for stock for the new company which will maintain the same retail sales outlets.

Youngstown Pressed Steel Co. developed unique methods and equipment for continuous automatic straight-line production of small tiles, which were made of 20-gage vitreous enameling sheet steel which came from the mills in about 10-ft. lengths.



## FOR BUSES ... BY PARISH

The modern motor bus has "lines", and Parish created some of them. Take this wheel housing for example. A good stamping job involving a smooth 3" draw in steel .078" thick. The outside curve is 25 3/4" radius.

Parish knows metals and how to form them. This, plus adequate press equipment, enables us to undertake and successfully carry to completion any difficult pressed metal job you can put up to us.

This service is for you. Won't you avail yourself of it?

**PARISH PRESSED STEEL CO.**  
Reading, Pa.

PACIFIC COAST REPRESENTATIVE  
R. Somers Peterson Co., 57 California St., San Francisco, Cal.

**PARISH** *Specialists in Stampings  
of Distinction*



# Machining Diesel Cylinder Blocks

(CONTINUED FROM PAGE 32)

solution heated and under pressure being sprayed over the blocks.

After being dried by compressed air, the bearing caps are removed, the bearing shells installed and main bearing caps precision-tightened by an air wrench. Before the bearing cap nuts

are pulled down, a bar is placed in the crankshaft position and all bearings tightened down. This bar must then turn freely so that proper clearance between crankshaft and bearings is assured.

The cylinder head studs are driven

in following this inspection, and a final reaming operation is performed in the liner bore. After installation of the cylinder liners at the next operation, the blocks are water-tested for leaks, and passed on to the engine assembly line, which has a maximum capacity of 160 engines every 8 hr. and ranges in speed from  $\frac{3}{4}$  to 30 in. per min.

Throughout the machining process, nine inspecting and testing devices are employed to check tolerances.

A serious problem confronting the engineers in planning this machinery layout was the placing of the heavy blocks into position for every operation with a minimum of time and labor. To achieve this purpose all the machines described herein are grouped closely together, and at first sight appear almost too crowded for efficient production. On closer inspection, however, it becomes evident that the location of each machine was plotted so as to enable operators to make as few unnecessary steps, and the work to travel as little waste distance as possible.

Among the handling devices for the cylinder blocks are roller conveyor tables, jib cranes and air hoists, double end hooks on hoist chains, hand and hydraulic roll-over dollies, which are used when the next operation calls for work on the opposite side of the block, and hydraulic lifts.



**You can vary  
Hele-Shaw Fluid Power**

*Quicker*

**than a woman can  
change her mind**

Hele-Shaw Fluid Power is oil under pressure. It provides instant and precise control. You can change its direction and vary its speed or pressure from zero to maximum, g-r-a-d-u-a-l-l-y or *instantly*—yes, quicker than a woman can change her mind.

This is *one* reason why so many machine designers, builders, and buyers are specifying Hele-Shaw Fluid Power for obtaining *controlled* linear or rotary motion. But there are other equally important advantages. Hele-Shaw Fluid Power offers wide flexibility of location. It increases production by instant and automatic adjustment to operating conditions. It sustains its pressures with a minimum loss of energy. Pumps, motors and transmissions are self-lubricating.

Write us for complete details. Ask us to show you how Hele-Shaw Fluid Power can be applied to advantage to the machinery you design, build or buy. Specify Hele-Shaw.



**A-E-CO  
HELE-SHAW  
FLUID  
POWER**

PUMPS, MOTORS & TRANSMISSIONS



A-E-CO  
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OTHER A-E-CO PRODUCTS: Lo-Hed Hoists, Taylor Stoker Units, Marine Deck Auxiliaries.

**AMERICAN ENGINEERING COMPANY**

2410 ARAMINGO AVENUE, PHILADELPHIA, PA.

## New Type of Steel Factory Building Designed

DEVELOPMENT of a new all-welded portal truss which eliminates diagonal members to permit the installation of conveyors, ducts or other facilities right in the roof structure has been announced by the Austin Co., Cleveland. The first plant of this type is now being erected for the International Agricultural Corp. at Chicago Heights, Ill.

Combining the advantages of welded rigid frame construction with this new functional truss, Austin engineers have devised framing which not only facilitates use of subceiling areas otherwise useless, but also permits installation of monorails directly on the bottom chord of the trusses. This is possible because of their capacity for carrying concentrated loads between the panel points.

## ..PERSONALS..

GEORGE D. SHAEFFER has been appointed chief engineer of the road machinery division of Gar Wood Industries, Inc., Detroit. For the past 11 years Mr. Shaeffer has been chief engineer for the road machinery division of the W. A. Riddell Corp., Bucyrus, Ohio. He was also with the



GEORGE D. SHAEFFER

Allis-Chalmers Mfg. Co.'s road machinery division for several years.

♦ ♦ ♦

WALTER J. AUBURN, purchasing agent for the Gerrard Co., Inc., manufacturer of wire-strapping machines and wire, has been appointed editor of the *Chicago Purchasor*, monthly magazine published by the Purchasing Agents' Association of Chicago.

♦ ♦ ♦

T. L. STRIMPLE, National Acme Co., Cleveland, has been elected president of the National Screw Machine Products Association, which held a two-day convention in Cleveland April 20 and 21. Other officers include: vice-president, JOHN HIGGINS, Whittet-Higgins Co., Providence, R. I.; treasurer, A. C. MAY, Peerless Automatic Machine Co., Cleveland, and secretary, O. B. WERTZ, Cleveland. New directors are: F. H. FISCHER, Fischer Special Mfg. Co., Cincinnati; R. C. PARKS, Commonwealth Brass Co., Detroit; J. W. SCHIPPMAN, Haber Screw Products Co., Chicago; R. O. PALMER, Chase Brass & Copper

Co., Waterbury, Conn., and W. G. NORD, U. S. Automatic Co., Amherst, Ohio.

♦ ♦ ♦

W. C. DUNN, president, Ohio Crankshaft Co., Cleveland, has departed for Europe for a three months' tour.

♦ ♦ ♦

W. H. DAVEY, president, W. H. Davey Steel Co., Cleveland, has been elected a director of the Grovesend Steel & Tin Plate Co., Ltd., South Wales.

GEORGE WARD of England, who has been in Warren, Ohio, for five months studying methods at the plant of Federal Machine & Welder Co., has left to open a new London office for British Federal Machine & Welder Co.

♦ ♦ ♦

CHARLES E. O'BRIEN, Grabler Mfg. Co., Cleveland, has been elected president of the Purchasing Agents' Association of Cleveland. VINCENT CADA, Eaton Mfg. Co., is first vice-president; J. R. KEACH, Ohio Rubber Co., second vice-president; A. C. MADER,

## SUPER-SERVICE RADIALS



### The First Three Led to 12 More High-Speed Super-Service Radials

● These views show a few of the 15 High-Speed, All-Geared Super-Service Radials recently installed by a nationally-known manufacturer, whose work includes a variety of jobs like the one shown in the center photograph. Operations in sequence are as follows: Drilling—six 9/16", seven 13/32", and 7/16", one 3/8", one 15/16", one 29/64", one 21/64", one 3/16", one 1/2", one 1/4", two 1/8"—23 HOLES PER PIECE IN ELEVEN DIFFERENT SIZES.

In addition, eight holes are tapped. Ability to change over quickly in order to handle a wide range of hole sizes economically on Super-Service Radials makes their use particularly advantageous. Their speed and ease of handling will inspire your operators. Ask our engineers to show you all the benefits of these modern machines.

THE CINCINNATI BICKFORD TOOL CO.  
OAKLEY, CINCINNATI, OHIO



## CINCINNATI BICKFORD



Bishop & Babcock Co., secretary. F. J. MEKET, Aluminum Co. of America, retiring president, was chosen national director. FRANK CHESNEY, American Steel & Wire Co., was elected a trustee for a two-year term.

♦ ♦ ♦

G. M. HUNTING has been appointed resident manager of engineering by the Austin Co., industrial engineer and builder, at its newly established office at Houston, Tex. DONALD G. AUSTIN is resident sales manager. Mr. Hunting joined the company in 1914 as a designer. From 1915 to 1922 he worked with the Grasselli Chemical Co. and then rejoined the Austin Co.

LORENZ IVERSEN, president, Mesta Machine Co., Pittsburgh, has been elected a director of Pennsylvania-Central Airlines Corp., Pittsburgh.

♦ ♦ ♦

DR. J. S. REID, Cleveland, president of Standard Products Co., Port Clinton, Ohio, has taken over active management of the plant, succeeding George Duffy, who has resigned. H. B. KNERR has been appointed office manager in addition to his duties of assistant treasurer.

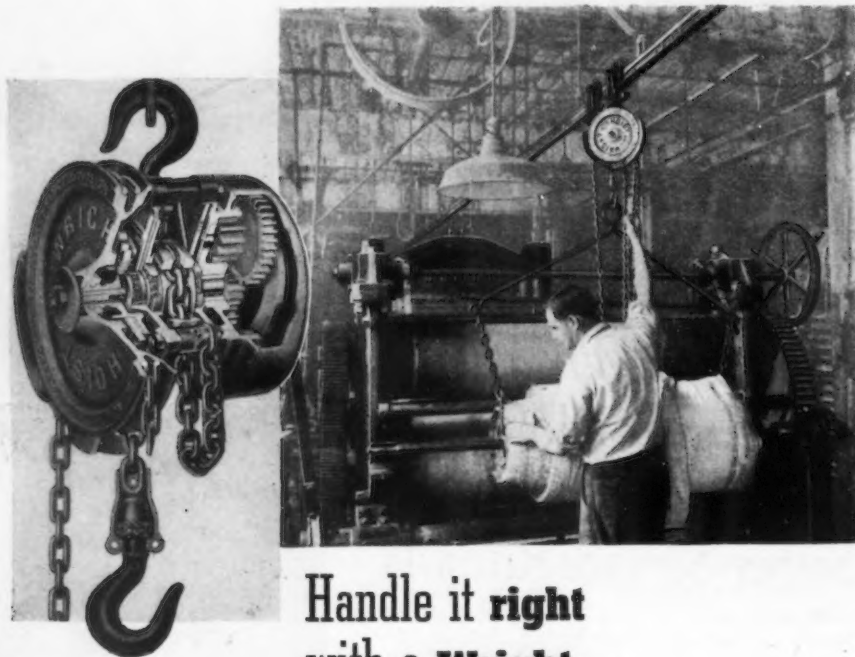
♦ ♦ ♦

D. W. STEWART, formerly manager of sales of Canadian Refractories, Ltd., of Montreal, has joined Basic-

Dolomite, Inc., Cleveland, as a vice-president. Basic-Dolomite has completed arrangements with Canadian Refractories for manufacture of that company's products in United States and Mexico.

♦ ♦ ♦

WILLIAM P. ANDREWS has been appointed manager of sales, Cincinnati district, Carnegie-Illinois Steel Corp., succeeding Lawrence K. Slaback, who died recently. Mr. Andrews has been with U. S. Steel Corp. subsidiaries since 1921 when he was weighmaster at the Gary tin mills of the former American Sheet & Tin Plate Co. He worked as a sales representative in the New York office and later in Chicago and Minneapolis until June, 1934, when he was appointed assistant manager of sales, Chicago district, which position he held until his present appointment.



**Handle it right  
with a Wright...**

● The inherently fine construction of the Wright High Speed Hoist makes it an exceptionally efficient production tool.

Every feature of this hoist spells quality—the zinc coated finish which defies corrosion; the precision load wheel bearings; the load chain guard and all the rest of the twenty-one features, assure you a hoist which will amply meet all

requirements.

The illustration above shows a Wright High Speed Hoist in use as a production tool in a large rubber plant. This is but typical of the many industries which consider the Wright to be just right for their purposes.

The new Wright catalog will be extremely helpful to you in many ways. Write for it right now.

**WRIGHT MANUFACTURING DIVISION  
AMERICAN CHAIN & CABLE COMPANY, INC.  
YORK, PENNSYLVANIA**



*In Business for Your Safety*

**WRIGHT Improved High Speed HOISTS**



**R. A. McCARTY**, formerly manager of the small motor department of Westinghouse Electric & Mfg. Co. at Lima, Ohio, has been transferred to Philadelphia as manager of the steam and stoker division.

P. C. REGAN has been appointed general manager of sales of the Andrews Steel Co., Newport, Ky.

### Correction in Vote At Shipbuilding Plant

A TOTAL of 3399 workers out of 3959 on the job and available for voting cast their ballots in the recent election held under the Plan of Employees Representation at Bethlehem Shipbuilding Corp.'s Fore River plant at Quincy, Mass. These figures were transposed in a news story appearing in last week's IRON AGE.



## ...OBITUARY...

MICHAEL J. KIST, manager of sales, Lorain division, Carnegie-Illinois Steel Corp., died at Johnstown, Pa., April 18. Mr. Kist started his steel career with Lorain Steel Co. in June, 1903,



M. J. KIST

and had been continuously employed by that company and its successor. He was made manager of sales, Lorain division, April 1, 1937, having previously been assistant manager of sales.

♦ ♦ ♦

CHARLES A. PERRYMAN, district sales manager of the American Cable Division, American Chain & Cable Co., Inc., Houston, Tex., died on April 12.

♦ ♦ ♦

THOMAS N. KURTZ, aged 55, leader in the refractories industry and vice-president of North American Refractories Co., died April 21 at Pittsburgh. Mr. Kurtz helped operate the first silica brick plant at Mt. Union, Pa., and in 1913 organized the Standard Refractories Co. at Claysburg, Pa., where he was general manager until 1922. He later became president of the U. S. Refractories Corp. at Mt. Union, holding this position until 1930 when the firm merged with the North American Refractories Co.

♦ ♦ ♦

JAMES B. HILL, 65 years old, retired automobile parts manufacturer, was buried at Detroit, April 20. He had lived in Detroit 14 years.

♦ ♦ ♦

J. E. WRAY, manager of Allis-Chalmers district office at Philadelphia, died suddenly April 18 as the result of a stroke. After graduating in electrical engineering in 1910 at Penn State College he became connected with the company's Norwood works, Cincinnati office, and in 1919 became a sales engineer at its Philadelphia office, being made manager of that office in January, 1937.



Dunbar perpetuates the craftsmanship of Springmaking . . . to give you uninterrupted service now and years from now.

Your springquiries get conscientious attention and capable execution

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DIVISION OF ASSOCIATED  
SPRING CORPORATION BRISTOL, CONNECTICUT

Be sure and specify "Clarks" on that order! Believe me, Clark's sure put an end to "Kicks" out in the shop, and I'm taking no chances of that happening again.

**CLARK**

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**CLARK BROS. BOLT CO.**  
MILDALE, CONN.

**BOLTS NUTS** **SCREWS RIVETS**

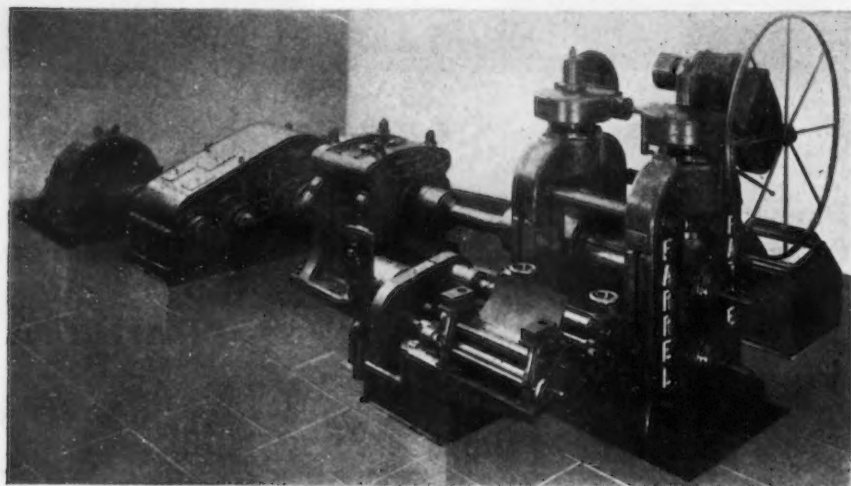
**DOMINANT SINCE 1854**

## G-E Produces 19,000,000th Watthour Meter

**P**RODUCTION of the 19,000,000th watthour meter manufactured by the General Electric Co., was completed recently at the West Lynn, Mass., works during the observance of the 85th birthday of the late Prof. Elihu Thomson, one of the founders of

G-E and a pioneer in meter development.

It was at the West Lynn works that Professor Thomson developed his first commercially successful motor meter for measuring either alternating or direct electrical energy. He won international honors at the Paris Exposition of 1890 for his pioneering development in the meter art, and some of his early designs are still in use. He held more than 700 patents and was the recipient of a number of scientific



## FARREL ALUMINUM STRIP MILL

This Mill was designed especially for rolling aluminum strip but is equally well adapted for other non-ferrous metals.

It is two-high, with 20" x 30" alloy steel rolls mounted in roller bearings. The screw-down can be either motor or hand operated. The Mill is equipped with uncoiling cradle, clamp type bridle bar and swinging type three-roll coiler with trimmer and chopper. Universal spindles connect the rolls and pinions.

The drive and pinion stand have Farrel-Sykes continuous tooth her-

ringbone reduction gears and mill pinions and roller bearings, with spray lubrication of the reduction gears, oil bath for the mill pinions and splash lubrication of the bearings. Farrel Gearflex Couplings connect the motor with the drive and the drive with the pinion stand.

Farrel Rolling Mills are designed for individual requirements and to meet the demands of modern rolling mill practice. Our engineers will be glad to explain, without obligation, the various features available and their applicability to specific conditions.

**Farrel-Birmingham Rolling Mill Equipment includes:** Rolls — Rolling Mills — Rod Mill Tables and Manipulating Equipment — Universal Mill Spindles — Rod Coilers — Lead Presses for Pipe or Rod — Roll Grinding Machines — Roll Calipers — Gears — Mill Pinions — Pinion Stands — Drives up to 10,000 H.P. — Flexible Couplings.

**FARREL** **FARREL-BIRMINGHAM COMPANY, Inc.**  
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and engineering awards. He was the chief founder of the Thomson Houston Electric Co., which was later merged with the Edison General Electric Co. to form the present General Electric Co. It is the birth of the first of these companies which G-E is this year celebrating as its 60th anniversary.

## Few Workers Opposing Apollo Pay Cut Offer

**A** SMALL group of SWOC members who are employees of Apollo Steel Co. last week voted to reject the company's offer of a graduated pay cut declared necessary to reopen its plant here. SWOC officials admit an "infinitesimal" number of union members not employed by Apollo voted, but other sources claim only 18 of 1100 employees of the company cast ballots.

Three hundred and eighty workers voted to accept a pay slash while 80 opposed a reduction at another election held recently. Anti-union workers are reported circulating back-to-work petitions, and have initiated an independent union. Also, some SWOC men are giving up union membership as feeling mounts against the SWOC.

## Tin Plate Industry In Wales Hard Hit

**LONDON (By Mail).**—Overproduction has caused temporary depression in the steel and tin plate industry in South Wales, which appears to have suffered more than any other British region from the recession. Four steel works are entirely idle, and others are operating part time. Of the 64 tin plate works, 34 are idle, and most of the others are pursuing limited production programs.

## Milwaukee Engineers Hear Nonferrous Metal Papers

**E**NGINEERS' SOCIETY of Milwaukee devoted its monthly dinner meeting at the Wisconsin Club on April 20 to a symposium on nonferrous metals. A. K. Higgins, technical supervisor of nonferrous foundries, Allis-Chalmers Mfg. Co., Milwaukee, discussed "Modern Brasses and Bronzes"; William R. Butler, resident engineer, Aluminum Co. of America, at Milwaukee, "Aluminum Alloys," and C. A. Crawford, New York research and development department, International Nickel Co., "Nickel Alloys."



## Westinghouse "Precipitron" Will Be Made in Cleveland

**A**FTER five years of research and experimentation in electrically precipitating dust out of the air, Westinghouse Electric & Mfg. Co. is centralizing the manufacture and sales of its "Precipitron" at Cleveland. F. R. Kohnstamm, manager of the Cleveland division which produces all Westinghouse lighting equipment, will supervise this newest air cleaning development. George F. Gegoon, formerly with the company's new products division is sales manager.

"The Precipitron," Mr. Kohnstamm said, "can make air 99 per cent pure within a few minutes. It precipitates dust particles, rag weed pollen and even the finer tobacco smoke particles by ionizing them with electrical charges and then draws the charged particles onto magnetized plates.

"Electrostatic precipitation," he explained, "has long been recognized as the surest method of removing fine dust and smoke particles, but the apparatus heretofore available has been very expensive and required high voltages ranging from 30,000 to 100,000 volts direct current, thus making it suitable only for very special industrial applications and in environments in which the treated air was not to be breathed.

"But in the Precipitron, the ionization is produced in a separate chamber which is designed to perform this function efficiently and safely. The separation of the particles is accomplished by passing the incoming air between parallel plates where a uniformly high gradient can be maintained and where a dust particle must travel only a short distance perpendicular to the air flow before this particle is removed from the air stream.

"The air first passes through the ionizing section. In this section a fine wire is maintained at a high direct current potential. This, together with the small wire size, results in an electrostatic stress concentration which is sufficiently high to give ionization by collision and self-maintained discharge, so that electrons are liberated and drift toward the grounded plate as gas ions.

"Any dust particles suspended in the air tend to collect electrons and hold those electrons until the particles touch some conducting surface. In other words, all dust particles passing through this ionizing region acquire an electrostatic charge and are at-

tracted to the grounded electrodes or collector plates."

G. W. Penney, manager of the electro-physics division of the company's research laboratories at East Pittsburgh, discovered this effective method of precipitating dust while conducting experiments in the ionization of air.

Early in its study of air cleaning Westinghouse installed a unit in a Pittsburgh hospital and Dr. L. H. Crip reported that most hay fever patients obtained rather quick relief while they remained in the room supplied with air from which the Precipitron had removed practically all pollen.

First major industrial installation of the new device was made at the Homer Laughlin china plant in Newell, W. Va., for the recovery of glaze used in an automatic glazing machine. The re-captured glaze is used repeatedly.



## A 2 to 1 FAVORITE *In The Automotive Industry*

● Automobile manufacturers are most exacting in their requirements for all production machinery... and especially so of forging equipment. Of their forging machines they demand fast, accurate, uninterrupted production.

Ajax Forging Machines with patented air clutch have met these demands most satisfactorily... that's why at least two out of every three forging machines purchased for automobile production since Ajax introduced the air clutch are Ajax built. These machines are working day and night forging transmission gears, universal joints, flanged drive shafts, steering gear sectors, valves, etc. to meet heavy production schedules.

The experience of automobile builders shows that any manufacturer with forging machine requirements can profit to the utmost by using Ajax Air Clutch Forging Machines.

*For Further Information Write for Bulletin No. 65*

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## COMING CONVENTIONS

April 28 to 29—Concrete Reinforcing Steel Institute, Homestead, Hot Springs, Va. Secretary of the institute is Mark Beeman, 201 North Wells Street, Chicago.

April 28 to 29—Association of Iron and Steel Engineers, Lord Baltimore Hotel, Baltimore. L. F. Coffin, Bethlehem Steel Co., Sparrows Point, Md., is general chairman of the program committee.

May 2 to 6—American Mining Congress, Music Hall, Cincinnati. J. D. Conover,

Munsey Building, Washington, is secretary.

May 3 to 4—American Steel Warehouse Association, Inc., Waldorf-Astoria Hotel, New York. W. S. Dosey, 422 Terminal Tower, Cleveland, secretary.

May 10 to 12—American Society of Mechanical Engineers, machine shop practice division, Sagamore Hotel, Rochester, N. Y. Secretary is J. R. Weaver, Westinghouse Electric & Mfg. Co., East Pittsburgh.

May 14 to 19—American Foundrymen's Association, annual convention, Cleveland. Secretary, D. M. Avey, 222 W. Adams Street, Chicago.

May 23—National Association of Purchasing Agents, Jefferson Hotel, St. Louis. Secretary of the association is G. A. Renard, 11 Park Place, New York.

May 23 to 24—Associated Machine Tool Dealers, Dearborn Inn, Dearborn, Mich. Secretary of the association is T. A. Fernley, Jr., 505 Arch Street, Philadelphia.

May 25 to 26—National Metal Trades Association, Hotel Biltmore, New York. Harry S. Flynn, Peoples Gas Building, Chicago, is secretary.

May 26—American Iron and Steel Institute, Waldorf-Astoria Hotel, New York. Walter S. Tower, 350 Fifth Avenue, New York, executive secretary.

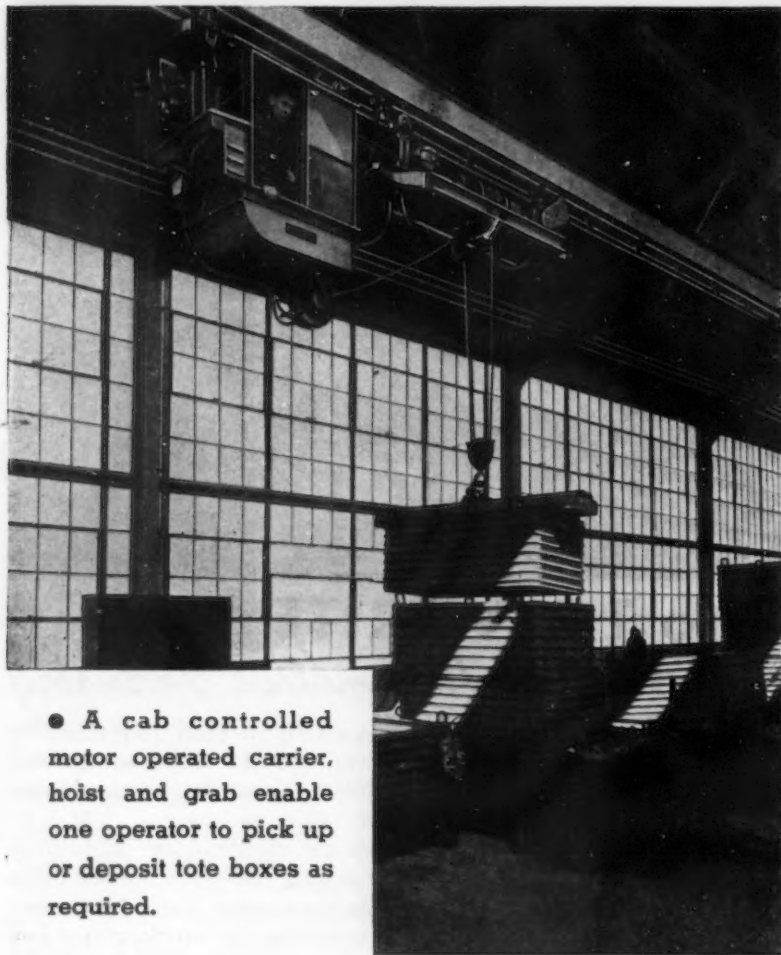
June 12 to 17—Society of Automotive Engineers, Greenbrier Hotel, White Sulphur Springs, W. Va. John A. C. Warner, secretary and general manager, 29 West 39th Street, New York.

June 27 to July 1—Annual meeting American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J. C. L. Warwick, 260 South Broad Street, Philadelphia, secretary.

Oct. 10 to 14—American Institute of Steel Construction, French Lick Springs, Ind. V. G. Iden, 200 Madison Avenue, New York, is secretary.



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## FINANCIAL NOTES

Copperweld Steel Co., Pittsburgh, report net income for 1937 of \$619,046, equal to \$2.89 a share, compared with net income of \$502,126 in 1936, or \$2.34 a share. President S. E. Bramer stated the company anticipates earnings for the first quarter this year will exceed the 50c. dividend for that period.

Sloss-Sheffield Steel & Iron Co., Birmingham, reports net income for 1937 of \$1,474,827, compared with \$868,463 in 1936.

Allegheny Steel Co., Pittsburgh, reports net profits for the year 1937 after surtax of \$1,813,707, equal, after preferred dividends, to \$2.10 a share on common stock, compared with \$1,829,137, or \$2.12 a share, in 1936. W. F. Detwiler, president, said inventories at the close of 1937 were \$4,536,478, compared with \$5,060,068 at the end of 1936.

Sharon Steel Corp. reports for the quarter ending March 31, 1938, a net loss of \$151,908.

Republic Steel Corp., Cleveland, reports a net loss for the first quarter of 1938, after deduction of all charges, of \$3,062,564. This compares with net profit of \$5,567,063 in the first quarter of 1937.

American Rolling Mill Co. announced that its operating profit in the three months ended March 31, 1938, was \$701,568. Preferred dividends were \$506,261, making a cash gain after preferred dividends of \$195,307. Depreciation and depletion reserve amounted to \$898,878, making a reduction in surplus of \$703,571.

Pittsburgh Screw & Bolt Corp., Pittsburgh, reports net loss of \$97,255 for the quarter ended March 31, 1938, compared with net income of \$517,523, equal to 36c. a share in the corresponding 1937 quarter.

Pittsburgh Coke & Iron Co., Pittsburgh, and subsidiaries report net profit of \$77,689 for the quarter ended March 31, compared with \$202,487 in the corresponding period of 1937.

Westinghouse Air Brake Co. and subsidiaries report net profit for the quarter ended March 31, 1938, before surtax, of \$135,030, equal to 4c. a share. This compares with profit of \$2,639,354, or 85c. a share, in the corresponding quarter last year. The same period last year included non-recurring profit of \$1,546,248.

## SWOC Loses 3 to 1 In Armco Election

**B**UTLER, Pa.—Climaxing an intensive membership campaign started over a year ago, the Steel Workers' Organizing Committee lost its first major collective bargaining election when employees of the American Rolling Mill Co.'s Butler plant voted three to one against the union last week. Of the 1685 ballots cast, 1243 were against the SWOC, 402 for the SWOC, one blank, two voided and 37 challenged.

The election was a consent election agreed upon by the company and the union under the supervision of the Nation Labor Relations Board and grew out of a petition of the SWOC requesting certification as sole collective bargaining agent for employees at the Butler plant.

## 1937 Rail Output 1,445,739 Tons

**P**RODUCTION of steel rails in the United States last year totaled 1,445,739 gross tons, the largest total for any year since 1930, when output was 1,873,233 tons, according to a statistical bulletin issued by the American Iron and Steel Institute. Last year's rail output, however, was only a little more than half of the annual average of 2,711,081 tons for the period from 1922 through 1929. In 1936, 1,219,846 tons was produced, as against 711,537 tons in 1935 and 1,010,224 tons in 1934.

## Dingle Elected Head Of Gear Association

**N**IAGARA FALLS, Ont.—Howard Dingle, president, Cleveland Worm & Gear Co. was elected president of the American Gear Manufacturers Association during a well attended three-day meeting here at Hotel General Brock. He succeeds H. H. Kerr, president, Boston Gear Works Co. Charles F. Goedke, president, Ganschow Gear Co., Chicago, was named vice-president.

Opening sessions featured addresses by F. H. Fowler, president, Foote Brothers Gear & Machine Co.; Prof. Frank A. Mickle, University of Michigan. H. N. Mathias, Westinghouse Electric & Mfg. Co. and J. L. Boon, Eastman Kodak Co. Proceedings of meeting will be included in next issue of THE IRON AGE.



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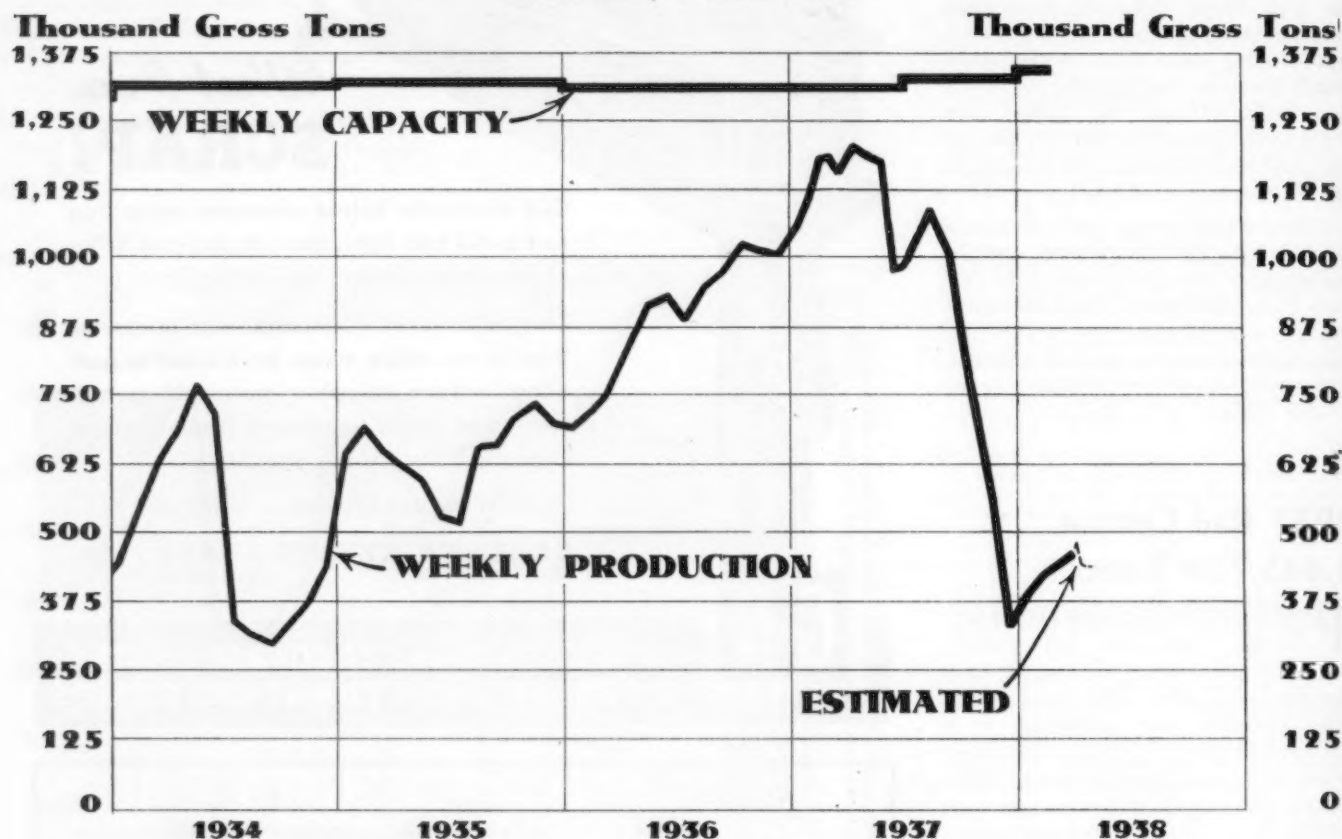
## BASIC ELECTRIC STEEL

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# PRODUCTION

Average Weekly Production of Open-Hearth and Bessemer Steel Ingots by Months, 1934-1937, and Estimated Production by Weeks in 1938



Figures for the Current Week Are Not Indicated on the Chart Until the Following Week

## STEEL INGOT PRODUCTION BY DISTRICTS: Per Cent of Capacity

	Current Week	Last Week
Pittsburgh	26.0	28.0
Chicago	34.0	30.0
Valleys	25.0	32.0
Philadelphia	27.0	29.0
Cleveland	24.0	23.0
Wheeling	68.0	57.0
Buffalo	31.0	31.0
Detroit	19.5	19.5
Southern	49.0	49.0
S. Ohio River	38.0	27.0
Western	30.0	30.0
St. Louis	42.0	42.0
Eastern	50.0	50.0
Aggregate	32.0	32.0

## Weekly Booking of Construction Steel

	Apr. 26, 1938	Apr. 19, 1938	Mar. 29, 1938	Apr. 27, 1937	Year to Date 1938	Year to Date 1937
Fabricated structural steel awards	16,325	8,900	12,400	12,550	219,300	430,295
Fabricated plate awards	1,500	225	3,000	2,495	48,870	55,425
Steel sheet piling awards	0	2,255	0	180	10,425	15,555
Reinforcing bar awards	10,630	4,360	1,180	5,900	71,515	62,985
Total Lettings of Construction Steel	28,455	15,740	16,580	21,125	350,110	564,260



## ...SUMMARY OF THE WEEK...

*... April steel buying in disappointingly small volume.*

o o o

*... Ingot production unchanged from last week's rate of 32 per cent.*

o o o

*... Steel scrap declines 50c at Pittsburgh and Philadelphia.*

**A**PRIL steel business has been disappointing to all producers, having run from 10 to 25 per cent below that of March, depending upon the company and the product.

Ingot production for the industry as a whole remains at last week's average of 32 per cent, but there have been wide fluctuations by districts in line with the irregularity of previous weeks.

The Wheeling-Weirton district leads the country with an average rate of 68 per cent, a gain of 11 points over last week, brought about partly by demand for tin plate and sheet bars. In the Chicago district there has been a rise of four points to 34 per cent caused chiefly by the receipt of a few rail orders. In other districts production is unchanged from last week or downward. The Pittsburgh district has dropped two points to 26 per cent, the Youngstown district seven points to 25 per cent and the eastern Pennsylvania area two points to 27 per cent. Some mills are running their open-hearth furnaces alternate weeks, accumulating enough ingots during one week to carry through the following week. This intermittent operation accounts in part for district fluctuations.

While business has not improved, sentiment is somewhat better, which is partly ascribed to the fact that Congress has become more assertive. The speedy enactment of helpful legislation and the defeat or shelving of other bills, followed by an early adjournment of Congress, would clear the decks for a return of confidence.

Building construction projects recently awarded, for which steel is now being specified, have given aid to some mills. Reinforcing bars have been relatively more active than structural shapes. In the past week about 10,600 tons of reinforcing bars have been awarded, including 4235 tons for the United States Engineer at Los Angeles and 1150 tons for a sewage disposal plant at Baltimore. New projects out for bids call for about 7000 tons. Structural steel lettings totaled about 16,300 tons.

Aside from 2800 tons for a bridge over the Potomac River, at Hancock, Md., 2100 tons for a sea-plane hangar at North Beach, New York, and 1500 tons for a Johns-Manville building near Petersburg, Va., the awards were in small lots. New Projects of 13,300 tons include 3300 tons for a Needle Trades School in New York, 1700 tons for a new approach to the George Washington Bridge New York, and 1200 tons for a bridge at Lacon, Ill. A Youngstown company is fabricating a blast furnace for India that will take 1500 tons of plates and shapes.

Public work continues to dominate the construction field, but projects started under the new Government spending program probably will not filter down to the steel mills for some months.

An automobile company has issued inquiries for bumper stock for 1939 models, the first that have been reported for the new cars. No appreciable improvement in buying of steel by the automobile industry is expected before July, when material for the 1939 cars will be required. The industry is believed to have passed its peak of production on 1938 models. The fresh outbreak of strikes in the Detroit district has brought irregularity in assemblies and has caused the holding up of some steel shipments.

Railroad buying is confined to a few rail orders. The Illinois Central has purchased 8700 tons of rails and accessories; the Wabash will buy 5750 tons of rails if court permission is given, and the Erie has taken bids on an indefinite quantity, but probably will not buy more than 15,000 tons. Despite the availability of Government loans, it is not expected that many railroads will borrow money to buy equipment, at least not until traffic is definitely headed upward.

Export sales of steel, pig iron and scrap have fallen to a low point. This condition prevails not only with American but also with European exporters. The International Tin Plate Cartel has reduced the export price of tin plate. For American mills that are cartel members the reduction means 62.5c. per base box less in sterling countries and 50c. less for countries that are on dollar exchange. This brings the export price to slightly above \$5 a base box.

Steel scrap appears to have hit a bottom at Chicago, but prices continue downward at Pittsburgh and Philadelphia, where 50c. reductions have occurred this week. There is said to be an abundance of No. 2 heavy melting steel but a potential scarcity of No. 1 steel, which might quickly reverse the price trend if mills came into the market to buy. However, there is very little mill interest, partly because of low steel production and partly because of large inventories of ore. THE IRON AGE scrap composite price has declined to \$11.92.

# ...PITTSBURGH...

**Ingot output down two points at Pittsburgh but rises 11 points in Wheeling-Weirton area . . . Steel scrap declines 50c a ton.**

**P**ITTSBURGH, April 26.—Raw steel output in the Pittsburgh district is off two points this week to 26 per cent of capacity and reflects further balancing of production with incoming business. Steel ingot operations in the Wheeling-Weirton district, however, have jumped 11 points to 68 per cent following resumption of open hearths in that district. This increase in part is due to tin plate and sheet bar demand.

Incoming business during the past week was perhaps a shade better than in the previous period, but the volume continues to indicate irregular hand-to-mouth buying. Taking the district as a whole, sales of steel products on a daily basis are about on a par with the corresponding period in March but individual company sales reports show variations.

No improvement in the near future is expected in hot rolled bar, sheet and strip and pipe demand, but there is a good possibility of slight increases in structural plate and shape, concrete bar and tin plate orders, owing largely to seasonal factors. Although sales of wire products reached their peak a few weeks ago, the falling off in demand has not been as marked as anticipated.

On the basis of small sales into consumption and lower dealer prices, No. 1 heavy melting is off 50c. a ton to a range of \$11.50 to \$12 a ton.

## **Pig Iron**

Orders and shipments so far this month are ahead of the like period in March. The increases are not large but a greater number of consumers have placed small tonnages. There is a possibility that a new sanitary manufacturing plant will locate soon at Blairsville, Pa., to be known as the Conemaugh Sanitary Mfg. Co.

## **Bars, Plates and Shapes**

Fresh bar orders are no more numerous than a week ago and demand continues spotty and irregular. A substantial increase in the number of structural inquiries and awards has materialized with the majority being

publicly financed projects. American Bridge Co., Pittsburgh, will furnish 4500 tons of material for contract No. 7, Midtown Tunnel, Queens, N. Y.

## **Reinforcing Bars**

Awards were slightly more numerous in the past week and included some projects that have been pending for quite a while. American Steel Engineering Co., Philadelphia, will furnish 500 tons of bars for Pennsylvania State College buildings. Truscon Steel Co., Youngstown, was awarded 500 tons of bars for a prison at LaGrange, Ky.

## **Cold Finished Bars**

New business, a portion of which is automotive buying, has been in slightly better volume, especially when compared with the sluggish demand of several weeks ago. Buying for 1938 models is about completed.

## **Sheets and Strip**

Occasional automotive fill-in orders, farm implement buying and carload

purchases by miscellaneous sources best describes current sheet activity. Taken as a whole, no definite uptrend is noted yet in sheet demand.

## **Wire**

The recent dropping off in merchant wire business has been made up in part by slightly better manufacturers' wire demand. Total wire business is holding up better than was anticipated. Mill prices are firm and secondary markets are strengthening.

## **Tubular Goods**

Oil-country goods demand continues the slight downward trend noted a few weeks ago. By comparison, however, this item is moving substantially better than other steel products. Demand for standard pipe and boiler tubes reflects no improvement from recent low levels.

## **Tin Plate**

With a seasonal pickup in packers' specifications but little or no change in general line can business, tin plate operations continue between 50 and 55 per cent. With no incentive for forward buying and with many companies conserving their cash position, can makers are no exception in ordering only that material which is absolutely necessary.

## **SWOC Limits Dues Collecting Pickets to 15, Bans "Insults"**

**T**HREATS, insults and name-calling in efforts to force SWOC members to pay dues were barred this week by Clinton S. Golden, SWOC regional director in the Pittsburgh area, following attempts by union leaders at various steel plant gates to force workers to pay. Mr. Golden ordered SWOC sub-regional directors and staff members to:

"1—Immediately discontinue the practice of having members or officers of any other union participate in any efforts to picket mill gates for dues collection purposes.

"2—Any such dues collection or picket committees must consist only of members who are employed in the plant or mill and should not exceed 15 in number.

"3—Under no circumstances will name calling, insults, threats or attempts to prevent any employee from going to work be permitted or tolerated."

"Many lodges," said Mr. Golden, "have been periodically having committees go to mill gates in a drive to have members pay their delinquent dues and thus bring their union membership up to date.

"In some instances difficulty has arisen over the manner in which some members of these committees or pickets have conducted themselves. Because of senseless tactics employed in some cases, particularly where employees have been prevented from going to work, management officials have interpreted this action as contract violation."

# A Comparison of Prices

Market Prices at Date, and One Week, One Month, and One Year Previous  
Advances Over Past Week in Heavy Type, Declines in Italics

## Rails and Semi-finished Steel

Per Gross Ton:	Apr. 26, 1938	Apr. 19, 1938	Mar. 29, 1938	Apr. 27, 1937
Rails, heavy, at mill.....	\$42.50	\$42.50	\$42.50	\$42.50
Light rails, Pittsburgh.....	43.00	43.00	43.00	43.00
Rerolling billets, Pittsburgh.....	37.00	37.00	37.00	37.00
Sheet bars, Pittsburgh.....	37.00	37.00	37.00	37.00
Slabs, Pittsburgh.....	37.00	37.00	37.00	37.00
Forging billets, Pittsburgh.....	43.00	43.00	43.00	43.00
Wire rods, Nos. 4 and 5, P'gh.....	47.00	47.00	47.00	47.00
	Cents	Cents	Cents	Cents
Skelp, grvd. steel, P'gh, lb.....	2.10	2.10	2.10	2.10

## Finished Steel

Per Lb.:	Cents	Cents	Cents	Cents
Bars, Pittsburgh.....	2.45	2.45	2.45	2.45
Bars, Chicago.....	2.50	2.50	2.50	2.50
Bars, Cleveland.....	2.50	2.50	2.50	2.50
Bars, New York.....	2.81	2.81	2.79	2.78
Plates, Pittsburgh.....	2.25	2.25	2.25	2.25
Plates, Chicago.....	2.30	2.30	2.30	2.30
Plates, New York.....	2.55	2.55	2.54	2.53
Structural shapes, P'gh.....	2.25	2.25	2.25	2.25
Structural shapes, Chicago.....	2.30	2.30	2.30	2.30
Structural shapes, New York.....	2.52	2.52	2.5125	2.5025
Cold-finished bars, P'gh.....	2.90	2.90	2.90	2.90
Hot-rolled strips, P'gh.....	2.40	2.40	2.40	2.40
Cold-rolled strips, P'gh.....	3.20	3.20	3.20	3.20
Hot-rolled annealed sheets, No. 24, Pittsburgh.....	3.15	3.15	3.15	3.15
Hot-rolled annealed sheets, No. 24, Gary.....	3.25	3.25	3.25	3.25
Sheets, galv., No. 24, P'gh.....	3.80	3.80	3.80	3.80
Sheets, galv., No. 24, Gary.....	3.90	3.90	3.90	3.90
Hot-rolled sheets, No. 10, Pittsburgh.....	2.40	2.40	2.40	2.40
Hot-rolled sheets, No. 10, Gary.....	2.50	2.50	2.50	2.50
Cold-rolled sheets, No. 20, Pittsburgh.....	3.45	3.45	3.45	3.55
Cold-rolled sheets, No. 20, Gary.....	3.55	3.55	3.55	3.65
Wire nails, Pittsburgh.....	2.75	2.75	2.75	2.75
Wire nails, Chicago dist. mill.....	2.80	2.80	2.80	2.80
Plain wire, Pittsburgh.....	2.90	2.90	2.90	2.90
Plain wire, Chicago dist. mill.....	2.95	2.95	2.95	2.95
Barbed wire, galv., P'gh.....	3.40	3.40	3.40	3.40
Barbed wire, galv., Chicago dist. mill.....	3.45	3.45	3.45	3.45
Tin plate, 100 lb. box, P'gh.....	\$5.35	\$5.35	\$5.35	\$5.35

On export business there are frequent variations from the above prices. Also in domestic business, there is at times a range of prices on various products, as shown in our detailed price tables.

## Pig Iron

Per Gross Ton:	Apr. 26, 1938	Apr. 19, 1938	Mar. 29, 1938	Apr. 27, 1937
No. 2 fdy., Philadelphia.....	\$25.84	\$25.84	\$25.84	\$25.76
No. 2, Valley furnace.....	24.00	24.00	24.00	24.00
No. 2, Southern Cin'ti.....	23.89	23.89	23.89	23.69
No. 2, Birmingham†.....	20.38	20.38	20.38	20.38
No. 2, foundry, Chicago*.....	24.00	24.00	24.00	24.00
Basic, del'd eastern Pa.....	25.34	25.34	25.34	25.26
Basic, Valley furnace.....	23.50	23.50	23.50	23.50
Malleable, Chicago*.....	24.00	24.00	24.00	24.00
Malleable, Valley.....	24.00	24.00	24.00	24.00
L. S. charcoal, Chicago.....	30.34	30.34	30.24	30.04
Ferromanganese, seab'd carlots.....	102.50	102.50	102.50	95.00

†This quotation is subject to a deduction of 38c. a ton for phosphorus content of 0.70 per cent or higher.

\*The switching charge for delivery to foundries in the Chicago district is 60c. per ton.

## Scrap

Per Gross Ton:				
Heavy melting steel, P'gh.....	\$11.75	\$12.25	\$13.50	\$20.75
Heavy melting steel, Phila.....	12.75	13.25	14.25	19.75
Heavy melting steel, Ch'go.....	11.25	11.25	11.75	19.50
Carwheels, Chicago.....	13.00	13.00	13.50	20.75
Carwheels, Philadelphia.....	14.75	15.75	15.75	21.25
No. 1 cast, Pittsburgh.....	14.25	14.25	15.25	20.25
No. 1 cast, Philadelphia.....	15.25	15.75	15.75	22.00
No. 1 cast, Ch'go (net ton).....	10.75	10.75	11.25	16.75
No. 1 RR. wrot., Phila.....	15.25	15.25	15.25	19.75
No. 1 RR. wrot., Ch'go (net).....	8.75	8.75	9.25	16.75

## Coke, Connellsville

Per Net Ton at Oven:				
Furnace coke, prompt.....	\$4.00	\$4.00	\$4.00	\$4.60
Foundry coke, prompt.....	5.00	5.00	5.00	5.25

## Metals

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Electrolytic copper, Conn.....	10.00	10.00	10.00	14.50
Lake copper, New York.....	10.125	10.125	10.125	14.62½
Tin (Straits), New York.....	37.75	39.00	40.50	56.75
Zinc, East St. Louis.....	4.25	4.25	4.25	6.75
Zinc, New York.....	4.64	4.64	4.64	7.10
Lead, St. Louis.....	4.35	4.35	4.35	5.85
Lead, New York.....	4.50	4.50	4.50	6.00
Antimony (Asiatic), N. Y.....	15.25	15.75	15.75	17.00

# The Iron Age Composite Prices

## Finished Steel

April 26, 1938  
One week ago  
One month ago  
One year ago

2.605c. a Lb.  
2.605c.  
2.605c.  
2.605c.

Based on steel bars, beams, tank plates, wire, rails, black pipe, sheets and hot-rolled strip. These products represent 85 per cent of the United States output.

HIGH LOW

1938.....	2.605c., Mar. 9;	2.330c., Mar. 2
1937.....	2.330c., Dec. 28;	2.084c., Mar. 10
1936.....	2.130c., Oct. 1;	2.124c., Jan. 8
1935.....	2.199c., Apr. 24;	2.008c., Jan. 2
1934.....	2.015c., Oct. 3;	1.867c., Apr. 18
1933.....	1.977c., Oct. 4;	1.926c., Feb. 2
1932.....	2.037c., Jan. 13;	1.945c., Feb. 29
1931.....	2.273c., Jan. 7;	2.018c., Dec. 9
1930.....	2.317c., Apr. 2;	2.273c., Oct. 29
1929.....	2.286c., Dec. 11;	2.217c., July 17
1928.....	2.402c., Jan. 4;	2.212c., Nov. 1
1927.....		

## Pig Iron

\$23.25 a Gross Ton  
23.25  
23.25  
23.25

Based on average of basic iron at Valley furnace and foundry irons at Chicago, Philadelphia, Buffalo, Valley and Southern iron at Cincinnati.

HIGH LOW

\$23.25, Mar. 9;	\$20.25, Feb. 16
19.73, Nov. 24;	18.73, Aug. 11
18.84, Nov. 5;	17.83, May 14
17.90, May 1;	16.90, Jan. 27
16.90, Dec. 5;	13.56, Jan. 3
14.81, Jan. 5;	13.56, Dec. 6
15.90, Jan. 6;	14.79, Dec. 15
18.21, Jan. 7;	15.90, Dec. 16
18.71, May 14;	18.21, Dec. 17
18.59, Nov. 27;	17.04, July 24
19.71, Jan. 4;	17.54, Nov. 1

## Steel Scrap

\$11.92 a Gross Ton  
12.25  
13.17  
20.00

Based on No. 1 heavy melting steel quotations at Pittsburgh, Philadelphia and Chicago.

HIGH LOW

\$14.00, Jan. 4;	\$11.92, Apr. 26
21.92, Mar. 30;	12.92, Nov. 16
17.75, Dec. 21;	12.67, June 9
13.42, Dec. 10;	10.33, Apr. 23
13.00, Mar. 13;	9.50, Sept. 25
12.25, Aug. 8;	6.75, Jan. 3
8.50, Jan. 12;	6.43, July 5
11.33, Jan. 6;	8.50, Dec. 29
15.00, Feb. 18;	11.25, Dec. 9
17.58, Jan. 29;	14.08, Dec. 3
16.50, Dec. 31;	13.08, July 2
15.25, Jan. 17;	13.08, Nov. 22



## ...CINCINNATI...

### ...Demand for sheets at about March level.

CINCINNATI, April 26.—The district sheet market is without strong demand. New business is approximately 30 per cent of mill capacities. The slight gains reported earlier in the month have been reduced, with prospects of April bookings being about the same as those of March. The jobbing demand is holding to recent gains and supplies the one bright spot to the otherwise drab market. Consumer inventories are reported to be light so that any change in general conditions will bring an immediate rise in steel demand.

Ingot production is up a few points to almost one-third of market capacity. One interest, however, has cooled all open hearths this week, but plans to relight them next week. Present figures show 11 out of 34 furnaces in operation.

The pig iron market is quiet. Tonnage is small and consists of single car orders. Shipments this month are lower than in March. The melt is lighter with an easing in demand for machine tool castings.

## ..SAN FRANCISCO..

### ...Good demand for reinforcing bars for coast projects.

SAN FRANCISCO, April 25.—Demand for reinforcing steel, both for flood control work and building construction, continues to dominate the local and southern California markets. The United States Engineer, Los Angeles, has awarded 4234 tons of bars to Bethlehem Steel Co., Los Angeles. This company will also furnish 705 tons for a vault for the United States Mint, San Francisco. Ceco Steel Products Co., San Francisco, took a 338-ton award for the Berkeley, Cal., high school shop.

Projects demanding reinforcing steel in the immediate future include a gymnasium and grandstand for George Washington High School, San Francisco, 425 tons; State of California products terminal, San Francisco, 338 tons; Agnew, Cal., State Hospital

ward, 300 tons; San Diego, Cal., county building; Imola, Cal., State Hospital wards; and San Mateo, Cal., Junior College buildings. Industrial plants to be erected in San Francisco by Schenley Distillers and Coca-Cola will require sizable tonnages within the next six months. Plans are under way for two large buildings for the Federal Government.

An award for constructing three large table cantilever cranes and enlarging four others to Colby Steel & Engineering Co., Seattle, has been sublet to Bethlehem Steel Co. The cranes are for use in constructing Grand Coulee Dam.

## ....PIPE LINES....

Columbia Gas & Electric Corp., 61 Broadway, New York, plans welded steel pipe line from present main trunk line in southeastern part of Pennsylvania to Coatesville, Pa., for natural gas transmission to plant of Lukens Steel Co. Lukens company proposes to change from fuel oil to gas operation.

Commonwealth Pipe Line Co., Mount Pleasant, Mich., plans 4-in. welded steel pipe line from Allegan County, Mich., oil field to new bulk terminal plant at Holland or Vriesland, Mich., where sites are being investigated, for crude oil transmission. Booster pumping stations will be installed.

Warden, Federal Reformatory Camp, Petersburg, Va., closes bids April 29 for 6150 ft. of 2½, 3 and 4-in. steel pipe (Circular 468).

Warren Petroleum Co., Tulsa, Okla., plans welded steel pipe line in McCampbell oil field, near Aransas Pass, Tex., to new oil refinery to be located in that district, for crude oil transmission; also steel pipe line gathering system in oil field noted, with booster pumping station.

Gulf Natural Gas Corp., Thibodaux, La., plans welded steel pipe lines in parts of Thibodaux Parish, including submarine lines, for natural gas transmission.

Bureau of Reclamation, Sacramento, Cal., asks bids until June 1 for construction of Shasta dam and power plant, Central Valley project, near Redding, Cal., including 13,600,000 lb. of steel penstocks and outlet pipes, and conduit linings; also 8,040,000 lb. of pipes and tubing (Specifications 780).

Union Oil Co. of California, Inc., 220 Montgomery Street, San Francisco, plans steel pipe lines for crude oil transmission and gathering system in connection with development of about 15,000 acres of oil lands near Harrison, Sioux County, Neb.

Portex Oil Co., Portland, Ore., plans welded steel pipe line for natural gas transmission to new natural gasoline plant near Logansport, La., where site has been purchased. Booster station will be installed. Entire project will cost about \$750,000.

Dillonvale, Ohio, has awarded contract to Gallagher & O'Horo, Youngstown, for a water distribution system requiring 160 tons of steel pipe.

## ...BOSTON...

### ...Foundry melt in New England at low point.

BOSTON, April 26.—The New England foundry melt is now down to 10 to 12 per cent of rated capacity. Business with Connecticut foundries, always leaders in activity, is growing progressively smaller. Few of them are operating more than three days a week, and all with greatly reduced crews. Under normal conditions one day's melt per foundry would more than equal the current three days. Some of the largest melters in that State who purchased iron last October and later in 1937 and had figured they had enough to carry through January and February and possibly March, now say they have six months' supply based on current operations. Several of the smaller companies are seriously considering going out of business, realizing that with property and earning taxes plus social security, the opportunity to obtain a dollar back for the dollar spent for operating the foundry has vanished in thin air.

The American Steel & Wire Co., Worcester, continues to operate one open-hearth furnace. The American Tube & Stamping Co., Bridgeport, Conn., heretofore operating one furnace, has put it out. Operations at the Washburn Wire Co., Phillipsdale, R. I., are irregular.

## ... CANADA ...

### ...Dominion mills booking good export orders, mainly British.

TORONTO, April 25.—New business was quiet in the Canadian iron and steel markets the past week. Local steel interests state that spot sales are holding at a good level and shipments against contract are being taken as scheduled. The automotive industry is responsible for fair movement of steel products. Sheet and bars continue to furnish the greater part of new business while structural steel sales are beginning to show some improvement. Canadian steel companies are closing good orders on export account, with British buying heading the list.

# ... CHICAGO ...

**... Ingot production rises four points to 34%, chiefly because of rail orders ... automobile maker inquiries for steel for 1939 models.**

**C**HICAGO, April 26. — After three weeks of declining and unchanging operations, ingot output this week has risen four points to 34 per cent of capacity, a new high for the year. Largely caused by the action of one producer, this boost in production is shared by two other mills also.

Rail orders account in great measure for this advance, some of the Illinois Central and Missouri Pacific tonnages being released for rolling on this week's schedules. District rail mills are operating at greatly reduced rates, one estimated at about 30 per cent. Present bookings are expected to permit continuation of this activity through May, by which time additional rail orders are expected.

Open-hearth activity at one mill was increased to replenish stocks and not because of additional new business.

Hardly noticeable is the betterment in automobile purchasing reported this week. Buick is said to have issued several inquiries for 1939 model bumper stock. An appreciable improvement in steel buying by this industry is not anticipated before July at the earliest.

Production of farm equipment is fairly steady. Small combines and other types of harvesting machinery are especially popular at the moment, while binders and reapers are losing ground. Farm interest in tractors is still great and manufacturers expect this trend to continue for another month.

Small jobs are occupying structural and plate fabricators to a moderate degree. One mill this week reported 78 inquiries under 100 tons totaling 5700 tons, in addition to a few larger projects amounting to 1500 tons.

Scrap prices are unchanged. Heavy melting steel is quoted at \$11 to \$11.50 a gross ton, delivered.

## **Pig Iron**

Activity thus far in April both in foundry coke and pig iron is slightly under that reported for the corre-

sponding period last month. Most of the plants melting for heavy industry are being hit harder than those producing light castings. In the past few weeks many foundries have reduced operations to one and two days a week. A few light shops are able to work five days weekly but the average of all types is nearer three. The spot carload business being received is occasioned largely by low inventories rather than new orders.

## **Wire and Wire Products**

Rural demand continues at a near normal pace but slack conditions among industrial consumers make the complete picture considerably less attractive. Other leading tonnage suppliers are jobbers, miscellaneous users and farm equipment makers.

## **Structural Shapes and Bars**

A few more inquiries and awards are in evidence this week, still mostly public in nature. Of the shape awards, two Cook County bridges to-

taling 1140 tons are outstanding. Fifteen hundred tons of reinforcing steel will be required for the Racine Avenue pumping station. Reinforcing bar prices are reflecting the downward trend of the general situation and cuts of \$10 a ton and more under the published prices have been made.

## **Plates**

Fabricating shops are operating at a fair rate on small jobs but plate demand for large projects is lacking. Railroads are not yet buying, pipe interest is only fair and tank building is slow.

## **Sheets and Strip**

Miscellaneous demand is providing local mills with some work but the lack of automobile purchasing is still a heavy factor toward depression. Specifications are being received from the farm implement and tractor makers and manufacturers of stoves, refrigerators and culverts.

## **Bars**

Buying continues best from the farm equipment group and probably this trend will not be interrupted for another month at least. Other large consumers have not increased their purchases.

## **UAWU Seeks New Contracts at Toledo**

**T**OLEDO.—Negotiations for a new labor contract have been opened by the United Automobile Workers Union and Willys-Overland Motors, Inc., Toledo. The union executive committee is seeking new clauses calling for an annual wage and the check-off of dues.

## **Lincoln Electric to Have Plant in Australia**

**J.** F. LINCOLN, president, Lincoln Electric Co., Cleveland, has announced the establishment of a manufacturing subsidiary to be called Lincoln Electric Co. (Australia) Pty., Ltd., at Sydney, Australia. A suitable factory has already been purchased and arc welding equipment manufacturing operations will begin in a year.

## **NLRB Head Clarifies Ruling on Republic**

**C**LEVELAND.—J. Warren Madden of Washington, chairman of the National Labor Relations Board, told an audience in Oberlin, Ohio, April 23, that the board's recent order to Republic Steel Corp. does not say that Republic "must re-employ strikers if there are no jobs."

"The order intends to place strikers in the same relative position of seniority as their fellows who did not go out on strike," said Madden. "It says that the company must discharge those men hired since the strike and then with strikers and non-strikers placed on an employment list in order of seniority, make the working force apply to present needs. The order does not contemplate that the company should pay men that do not work or that it use more men than there is work for."



# ... CLEVELAND ...

**April steel business has been disappointing . . . Ingot production drops seven points at Youngstown . . . Erie Railroad takes bids on rails.**

**C**LEVELAND, April 26. — Detecting stronger underlying sentiment among miscellaneous steel consumers recently, producers are awaiting a reflection of the better feeling to be shown in orders. Gains expected for April have been disappointing, the month's business being about on a par with the March volume in most products.

Ingot output for Youngstown and nearby cities is down seven points to 25 per cent this week, lower schedules prevailing in three plants. The Cleveland-Lorain rate is up one point to 24 per cent. The depletion of inventories held by some fabricators has been a very slow process, and others who have allowed their stocks to drop well below the level for normal operations see no need for haste in building them up right now.

The Erie Railroad received prices today (Tuesday) on its requirements of rails and fastenings. No tonnages were specified by the Erie, although earlier the Road estimated it needed around 16,000 tons of rails for 1938.

Bids close Friday on the superstructure for the 10,000-ton Main Street bridge here and it is expected that soon the State will issue plans on an elevated clover leaf intersection near Willow in this county, which may require 1000 or more tons of bars and shapes. A blast furnace for India, being built in Youngstown, will require around 1500 tons of plates and shapes. One rivet manufacturer here is active on Government shipbuilding work and taking fair amounts of steel.

## Pig Iron

With April nearly ended, shipments are below the March rate, and, although iron ordered six to eight months ago is being gradually used up by automotive foundries, the general outlook for the immediate future holds no promise of any sharp gain in bookings by furnace operators. Producers believe the decline in April deliveries is partly due to tapering demand from implement foundries, and the fact that some stimulus was provided toward the end of March by freight rate increases.

## Iron Ore

Consumption of Lake Superior iron ore by furnaces during March was 1,980,182 gross tons, a gain of 253,597 tons as compared with February when the consumption was 1,726,585 gross tons, according to the Lake Superior Iron Ore Association. Consumption in March a year ago was 5,142,496 gross tons. Ore at furnaces April 1 amounted to 29,736,080 gross tons compared with 31,392,307 tons on March 1 and 14,585,355 tons on the same date a year ago. Amount on Lake Erie docks April 1 was 5,487,221 tons compared with 5,775,094 tons one month before and 2,851,951 tons on April 1 last year. There were 71 furnaces using Lake ore in blast April 1, the same as on March 1.

## Sheets and Strip

Cabinet makers and miscellaneous consumers continue to buy sheets and strip fairly regularly, but automotive releases remain small. During the past week strip releases from cold rollers have improved. Demand for narrow width strip has picked up and

one parts maker using stainless has been active.

## Wire and Wire Products

Seasonal demand for merchant wire products from the northwest section of the nation is helping to maintain mill activity. It now appears that April orders will come closer to the level of March than had previously been expected. Consistent buying, although reduced in comparison to one year ago, is reported by sellers of merchant products in a number of sections in the East, Middle West and South. Demand for manufacturers' wire remains quiet.

## Bars, Plates and Shapes

Hot-rolled bar sales for April are comparable to those of March in this district, a number of agricultural implement manufacturers remaining active while certain machine tool makers, rivet producers and miscellaneous consumers are maintaining operations. Activity in plates and shapes here included the closing of bids next Friday on the Main Street bridge, a blast furnace being built for India at Youngstown, the Erie Railroad's call for prices on rails and fastenings, the state's preparation of plans for a clover leaf intersection in this county which may require 1000 tons or more of bars and shapes.

## RAILROAD BUYING

**Canadian Pacific** has ordered 10 locomotives from Montreal Locomotive Works.

**Pullman Company** has ordered one passenger car from Pullman-Standard Car Mfg. Co.

**Southwest Missouri** has placed an order for two 30-ton gasoline locomotives with Plymouth Locomotive Works.

**Chicago Great Western** has placed an order for repairs to 27 freight cars with Pullman-Standard Car Mfg. Co.

**The Wabash** has asked for authority to make general repairs to and install truck springs on 300 box cars at a cost of \$589 each, total \$176,700.

**Bangor & Aroostook** has been granted authority to issue \$1,500,000 in equipment trust certificates to finance purchase of 656 all-steel cars to cost a total of \$1,956,620. Orders have been placed.

**New York, New Haven & Hartford** trustees have been granted authority to issue \$1,640,000 in equipment trust certificates to apply on purchase of six electric passenger locomotives and six diesel electric switching locomotives

to cost a total of \$2,190,000, for which orders have been placed.

## RAILS AND TRACK SUPPLIES

**The Wabash** has asked for authority to lay 10,000 tons of 112-lb. rails, of which 5750 tons are to be purchased and 4250 tons are on hand.

**Illinois Central** has ordered 5000 tons of 112-lb. rails and 3700 tons of accessories.

## 500 Gar Wood Employees Stage Sit Down Strike

**D**ETROIT.—A sitdown strike of approximately 500 employees Monday morning closed the Gar Wood Industries, Inc., plants. The strikers were members of the UAW but C. W. Wood, general manager of the firm, said that the plants had not been operating under a contract recently. The company offered to negotiate but the union men refused to listen and the strike was called simultaneously at both plants.



## ....BUFFALO....

### ...Reinforcing bar orders add to mill rollings.

**B**UFFALO, April 25.—Orders for reinforcing steel are holding production of bars at the highest level since the start of the year. One interest is operating all three of its bar mills.

The ingot production rate is unchanged at 30 per cent of capacity. Orders are still limited to immediate requirements. The labor trouble in Detroit plants has caused a further falling off in demand for sheets, which is far below normal.

A decline in pig iron shipments has brought average business for the month down to the level of March. Buying of iron shows no change as orders are restricted to spot carloads. Foundries are generally operating two to three days a week. Inventories are believed to be low but no future contracting of any size is reported.

Warehouse business shows a mild tapering off.

The Border Building Co., Buffalo, was low bidder on the general contract for the central school, Greigsville, N. Y. A school at Cuba, N. Y. calling for 310 tons of structural was put up for bids May 4. E. J. Albrecht Co., Chicago, Ill., was awarded the general contract for the U. S. Army dam at Arkport, N. Y.

## ....ST. LOUIS....

### ...Wabash to buy 5750 tons of rails, repair cars.

**S**T. LOUIS, April 26.—The Wabash Railway has asked the Federal Court here for authority to lay 10,000 tons of new 112-lb. rails, including 5750 tons to be purchased to be used with 4250 tons which the road has on hand. The total cost of the rails is given at \$550,000. Authority also is asked to make general repairs to and install non-harmonic truck springs on 300 box cars at a cost of \$589 each, or a total of \$176,700. Judge Davis set the application down for hearing on Friday.

The demand for finished steel continues light, but there appears to be a better undertone, according to mill representatives. As inventories are being depleted, some inquiries are be-

ing made for lighter materials, but heavy industries are more hesitant. Illinois Highway Commission has four bridge projects pending which will require 1200 tons of structural shapes.

A further slowing down of operations in the agricultural implement belt is reported, reducing the melt of pig iron. It is estimated that operations are at about 50 per cent of capacity.

Ingot output is at 38 per cent of capacity.

## ...BIRMINGHAM...

### ...Production and orders at a fair rate.

**B**IRMINGHAM, April 25.—For some weeks production of iron and steel has been maintaining a steady rate. Twelve blast furnaces and 12 open hearths are in operation. Tennessee Coal, Iron & Railroad Co. is working six open-hearth units at Fairfield, three at Ensley. Republic Steel Corp. has three on at Gadsden. Tennessee Coal, Iron & Railroad Co. has seven active blast furnaces; Woodward Iron Co., two; Sloss-Sheffield, two and Republic Steel, one.

Steel bookings continue to flow in at a fair rate. There is little improvement in the pig iron market. Foundries are still taking iron on a hand-to-mouth basis.

Central Foundry Co., Holt, Ala., resumed operations Monday after a week's shutdown, due to a strike.

Virginia Bridge Co. has booked an order of 800 tons of prefabricated steel for the Will Rogers Rodeo stadium, to be erected by the Broadmoor Hotel near Colorado Springs, Colo.

Rust Engineering Co. has been awarded a contract by TVA to raise the State highway bridge at Guntersville, Ala. This is made necessary by the construction of the Guntersville dam.

A group of American Can Co. officials last week inspected the new tin plate mill of the Tennessee Coal, Iron & Railroad Co. In the party were Henry W. Phelps, chairman; Herbert A. Baker, president; A. R. Pfeltz, vice-president. They were accompanied by Benjamin F. Fairless, president, and H. L. Hughes, vice-president, of U. S. Steel.

Hollingsworth-Whitney Co., Boston, is proceeding with plans to construct a large paper mill at Mobile, expected to cost around \$5,000,000.

## ...CAST IRON PIPE...

Bridgeport, W. Va., plans pipe lines for water system and other waterworks installation. Fund of \$45,000 is being arranged through Federal aid.

Lewistown, Mont., closes bids May 2 for 30,500 lin. ft. of 20-in., 200 ft. of 16-in., and 300 ft. of 12-in. for water system, with alternate bids for other kinds of pipe; also for pipe specials, valves, etc. Joseph M. Schmit is city engineer.

Conneaut, Ohio, plans pipe lines for water system, including replacements of present lines in several districts with larger size pipe. Cost about \$25,000. T. F. Linninger is city engineer.

Metropolitan Utilities District, Eighteenth and Harney Streets, Omaha, Neb., Col. T. A. Liesen, secretary, plans about 3300 ft. for main water line to Keystone Park district.

Baraboo, Wis., plans extensions in water pipe lines; also improvements in pumping station and installation of additional equipment. Fund of \$44,900 is being arranged through Federal aid.

Asheboro, N. C., plans extensions and replacements in water pipe lines. A bond issue of \$125,000 is being arranged for this and sewage system. W. E. Yow is city manager in charge.

Green Bay, Wis., closes bids May 4 for pipe for water system; also fittings, valves, hydrants, meters, etc. Board of Water Commissioners, George Martin, president, is in charge.

Creston, Iowa, plans about 7400 lin. ft. of 4 and 2-in. for extensions in water system.

Kermit, Tex., plans pipe lines for water system; also new sewage system. Financing is being arranged through Federal aid. J. E. Ward, Harvey-Snyder Building, Wichita Falls, Tex., is consulting engineer.

Danville, Va., plans main pipe line for water supply in connection with development of new source on Sandy River; also extensions in distributing lines.

Keewatin, Minn., plans extensions in water pipe lines; also extensions and replacements in municipal steam distribution lines for heating service. A special election has been called to approve bonds for \$45,000.

Madison, Wis., plans pipe line extensions and replacements in water system; also other waterworks equipment, including pumping station. Fund of \$92,670 has been secured through Federal aid. Leon A. Smith is superintendent of water department.

Alhambra, Cal., has awarded 10,000 ft. of 6-in. and 1000 ft. of 8-in. pipe to National Cast Iron Pipe Co., Los Angeles.

Constructing Quartermaster, Fort Mason, Cal., asks bids May 12 for 30,500 ft. of 10-in. cast iron or steel pipe for line from Palo Alto, Cal., to Moffett Field, Sunnyvale, Cal.

Kaukauna, Wis., has placed 1500 ft. of 6-in. water mains with James B. Clow & Sons, Chicago.

Milwaukee Township, Milwaukee County, Wis., has placed about 100 tons of 6 to 16-in. water pipe with United States Pipe & Foundry Co.

Necedah, Wis., has low bid from Central Foundry Co. on about 200 tons of pipe for new waterworks system.

Neenah, Wis., closes bids April 26 on about 150 tons of 6 and 8-in. centrifugal water pipe and 10 fire hydrants.

## ...NEW YORK...

**... April orders in smaller total volume than those of March . . . Buyers bringing more pressure to bear on prices . . . Tin plate export price reduced.**

**N**EW YORK, April 26.—The volume of steel business thus far in April has not kept pace with the March rate. A representative company states that its orders in this district are about 25 per cent lower in total tonnage than in the corresponding period last month.

All steel companies are experiencing greater pressure on prices from buyers. The situation is being watched closely by buyers and sellers alike.

The International Tin Plate Cartel has reduced prices on tin plate for export. The reductions amount to about 62.5c. per base box for countries that are on a sterling basis and 50c. a base box for countries that are on a dollar exchange basis. The export price had been slightly above the domestic base price of \$5.50.

### **Plates and Shapes**

Plate business is duller than it has been, and there is little new tonnage in sight. Sellers compare present conditions with those prevailing in 1932. There has been a little more activity on the part of the jobbing trade, but this is all fill-in material and the total quantity involved is small. The tank builders are hardly active, despite seasonal influences. The only large project in sight is the 30 welded steel scows to be built by the Department of Sanitation. Bids are due May 9. About 6000 tons of plate are involved.

A flurry of orders from refrigerator makers gave some sheet sellers a better week than any thus far in April, but the volume for the month will probably be under that of March by 25 to 33 per cent. There has been a little better ordering from the smaller jobbers, but the larger factors are still heavily stocked, particularly with galvanized sheets. Retail prices are on the soft side, and there is considerable demand for seconds.

### **Pig Iron**

There is no discernible trend in the purchasing activities of foundries in this district, as consumers continue to cover only to the extent of their im-

mediate requirements. Shipments thus far this month are, however, running slightly ahead of the March volume, lending support to the belief that melters' stocks are at present the lowest they have been in several years. The average casting schedule of foundries here is about two days a week. Jobbing shops, particularly in Brooklyn,

## ..GREAT BRITAIN..

**... Tin plate export price reduced.**

**... Continent reports better steel demand.**

**L**ONDON, April 26 (By Cable).—The Continent reports a better steel demand, especially for early shipment. American works are reported competing in ship plates for Holland and Scandinavia.

The International Rail Makers Association and the management committees of the Steel Cartel will meet in Rome about the middle of May. The Thin Sheet Cartel meets this week end.

The Turkish Government has placed orders with Krupps for about £2,500,000 of rolling stock on six years' credit.

The International Tin Plate Cartel has reduced the tin plate price by 2s., 3d. basis. Welsh tin plate now at c.i.f. prices equal to 20s., 3d. to 20s., 6d. f.o.b. plus freight and insurance. The schedule of extras allowances is unchanged. The tin plate market is quiet but a revival of demand is now expected.

Australia is permitting further import of 25,000 tons of galvanized sheets by Oct. 31. It is reported that American mills have already booked some of the tonnage.

Delays in announcing the official decision regarding United Kingdom pig

are faring somewhat better than the rest of the trade, their present casting schedules being between four and five days a week. Several new export inquiries were received during the past week for tonnages ranging from 500 to 1000 tons. One such inquiry, from England, specified low phosphorus, bessemer and malleable grades.

### **Reinforcing Bars**

The volume of awards in the past week, though slightly below the preceding week's total, is substantially above the average week of the past several months. Public projects continue to be the dominating factor in the building field. Pending tonnages total about 2500 tons, led by 1330 tons of bars and wire mesh for an approach to the George Washington bridge.

iron duty restoration is causing irritation and business is idle. Large imports are yet to be absorbed, and, as makers are holding large unsold stocks, drastic curtailment of pig iron output in the near future is envisaged and a possible reduction in second half prices.

Heavy steel is still in good demand, but mills are rapidly overtaking arrears in deliveries except in the case of construction material.

Exports of pig iron from the United Kingdom during March amounted to 4700 tons, of which none went to the United States. Total iron and steel exported amounted to 176,000 tons. March imports of all kinds amounted to 277,000 tons, of which 47,000 tons came from the United States.

## **British Armament To Be Speeded up**

**L**ONDON (By Mail).—Plans for the speeding up of armament production, as called for by the enlarged defense program, are proceeding steadily in Britain. The Government has in mind the ultimate concentration of several hundreds of thousands of additional men on the work. The peak of the intensified productive effort is expected to be reached toward the end of 1939, but it is to be maintained for at least five years. The mobilization of labor requires to be planned and organized ahead, so that the labor supply will keep pace as the national effort gains momentum.



# .. PHILADELPHIA ..

**Eastern Pennsylvania operations off two points to 27 per cent . . . Fabricators report more private work . . . Scrap down . . . Plates, shapes and sheets inactive.**

**P**HILADELPHIA, April 26.—This district is devoid of any real sentiment regarding much improvement in steel turnover during the next several months. Unless car loadings show a decided spurt soon, which is unlikely, there is little reason to expect railroad shops to take on additional steel for many a month, autobody stamping plants here expect no improvement in steel consumption for some time, and ship building tonnages, although being more promising, will undoubtedly experience considerable delay and can hardly reach mill rolling schedules until the fall. With such a dull situation ruling, steel sellers on the whole exhibit little concern regarding prices, as the general feeling is that no mill can uncover a sufficiently attractive tonnage to warrant going after it on a price basis.

Reflecting the slim order books common to mills in this district, open hearth operations have been scaled down further, the aggregate rate in eastern Pennsylvania now being approximately 27 per cent, off two points from a week ago. There is a fair amount of semi-finished steel stock scattered around the district, which in turn will serve to keep operations here at a low level for some time.

Forging plants in this area are almost inactive, with a major mill operating only one day last week and completely idle this week. Thus, the demand for billets is almost nil. About 300 tons of alloy bars has been sold to Baldt Anchor Chain & Forge Co., Chester, which company has orders for a good portion of the anchor chain specified for boats being built in this vicinity.

Scrap prices have been marked down 50c. a ton, purely on sentiment alone. There is practically no domestic demand, and export shipments are of no great moment. New export orders are very slack, as both Japan and Italy are unwilling to release foreign exchange to buy the scrap they are badly in need of.

## **Pig Iron**

The aggregate district melt is holding fairly steady, but nonetheless there is neither market sentiment nor incentive to buy pig iron, other than in

occasional small lots for prompt delivery. Pipe makers are almost inactive, but are hopeful that the proposed building program will eventually be reflected on their books. The only recent buying of moment was 400 tons of foundry iron for Thatcher Furnace Co., Garwood, N. J., which was split among four furnaces at published price levels. This company originally inquired for 1000 tons, but as yet has made no decision regarding disposition of the remaining 600 tons. At the moment, there is little foreign iron coming into this area, as demands here are not sufficiently brisk to encourage such European participation.

## **Sheets and Strip**

No large consumer is giving the market much support. Autobody stamping plants are entering commitments in a small way, and radio builders have been in and out of the market for incidental lots, but the stove and tank fabricators, the railroads and the shipyards are all in no position to take on additional inventories. Tin plate consumers in this district have their warehouses pretty well stocked, but with consumption gradually climbing there is hope that mill turnover will show more snap within the next six weeks. All inquiry fails to develop the slightest indication of price shading, but for that matter there is no business in the market sufficiently attractive to encourage any mill to take price action.

## **Plates and Shapes**

It is definitely encouraging to note that several of the larger fabricators in this area report perceptible improvement in business over the past several weeks, mostly of a private nature. Prices, however, are still none too attractive and show no tendency toward improvement. Structural steel lettings during the week were confined to 560 tons for Buffalo transmission towers, awarded to Lehigh Structural Steel Co., 160 tons to Bethlehem for a coal breaker at Ashley, Pa., 110 tons for a Rodoy Grove, Pa., school, placed with Griffith Custer Steel Co., and 115 tons for a Wassaic, N. Y., school awarded to Belmont Iron Works, this latter company also having just received an award for 1500

tons for a new Johns Manville plant to be erected in the vicinity of Petersburg, Va. Pending structural work includes nine highway bridges, totaling 385 tons, on which bids are due at Harrisburg, April 29. Reinforcing inquiry continues to lag, and prices are erratic and none too satisfactory. The week's largest award was for 1500 tons for a culvert at Kingston, Pa., which went to Taylor-Davis, Inc., and active projects are made up of 2000 tons for a prison building and several hundred tons of bars for miscellaneous State work. The plate market is as dull as it has been since the bottom of the last depression, what with the railroads completely out of the picture and ship tonnages being delayed. Prices have received no test but appear to be steady. Jobber stocks have been pretty well weeded out, and occasional replacement orders are coming in.

## **Pollock to Build Stack For Tata in India**

**Y**OUNGSTOWN. — William B. Pollock Co., Youngstown, has been awarded a contract for a new blast furnace for Tata Iron & Steel Co., India. The stack proper and three stoves, involving about 1500 tons of plates and structural material, will be started immediately in the shops here. The new furnace is to have a capacity of about 1000 tons.

## **Armco Head Will Address Foundrymen**

**C**HARLES R. HOOK, president and general manager of the American Rolling Mill Co., will address the annual business meeting of the American Foundrymen's Association in Cleveland May 11. This address will be the first of an annual series sponsored by the foundrymen's association and is timed to interest visitors to the foundry convention in Cleveland that week.

## **Kay to Head Machinery Group of Credit Men**

H. E. Kay, credit manager, Industrial Brownhoist Corp., Bay City, Michigan, will serve as national chairman of the machinery manufacturers' group of the 1938 Credit Congress. This will be the 43rd consecutive annual meeting of the credit men and will be held this year at Hotel St. Francis, San Francisco, June 5 to 10.



## REINFORCING STEEL

... Awards of 10,630 tons  
—7000 tons in new projects.

### AWARDS

- 4234 Tons, Los Angeles, for United States Engineer (Proposal 419), to Bethlehem Steel Co., Los Angeles.
- 1150 Tons, Baltimore, sewage disposal plant, to Concrete Steel Co., New York.
- 705 Tons, San Francisco, vault for United States Mint, to Bethlehem Steel Co., San Francisco.
- 570 Tons, Queens, N. Y., sewer, to Carroll-McCreary Co., Brooklyn.
- 500 Tons, State College, Pa., Penn State College, to American Steel Engineering Co., Philadelphia.
- 500 Tons, LaGrange, Ky., prison, to Truscon Steel Co., Youngstown.
- 338 Tons, Berkeley, Cal., high school shop, to Ceco Steel Products Co., San Francisco.
- 300 Tons, Bayonne, N. J., oil tank supports, to Faltoute Iron & Steel Co., Jersey City.
- 280 Tons, Burlington, Iowa, memorial auditorium, to Sheffield Steel Corp., Kansas City, Mo.
- 270 Tons, Missoula, Mont., underpass, to Bethlehem Steel Co., Denver.
- 260 Tons, Helena, Mont., underpass to Bethlehem Steel Co., Denver.
- 235 Tons, Butte, N. D., bridge, to Bethlehem Steel Co., Bethlehem, Pa.
- 150 Tons, South Bend, Ind., Rockne Memorial Field House, to O. J. Dean Co., Chicago.
- 150 Tons, New York, WPA requirements,

through Treasury Department, to W. Ames & Co., Jersey City.

- 150 Tons, Earp, Cal., Bureau of Reclamation, to Northwest Rolling Mill, Seattle, Wash.
- 132 Tons, Odair, Wash., Bureau of Reclamation, to Sheffield Steel Corp., Kansas City, Mo.
- 125 Tons, Stoughton, Wis., post office, to Joseph T. Ryerson & Son, Inc., Chicago.
- 125 Tons, Sacramento, Cal., First Church of Christ Scientist, to Palm Iron Works, Sacramento.
- 122 Tons, Mills, Wyo., Bureau of Reclamation, to Colorado Fuel & Iron Co., Denver.
- 120 Tons, Huntingdon, Pa., filtration plant, to Claster Supply Co., Lock Haven, Pa.
- 110 Tons, Romulus, N. Y., central school district No. 3, to Truscon Steel Co., Youngstown.
- 100 Tons, Chicago, Golden Rod Ice Cream Co., to Joseph T. Ryerson & Son, Inc., Chicago.

### NEW REINFORCING BAR PROJECTS

- 1400 Tons, Kingston, Pa., Dam, U. S. Engineers, Taylor-Davis, Inc., Philadelphia, low bidder.
- 1500 Tons, Chicago, Racine Avenue pumping station; bids May 5.
- 1330 Tons, New York, bars and mesh, approach, George Washington bridge; bids received by Port of New York Authority until May 10.
- 425 Tons, San Francisco, George Washington High School gymnasium and grandstand.
- 380 Tons, Fairfield, N. J., State hospital unit.
- 350 Tons, Chicago, Coca-Cola bottling plant.
- 338 Tons, San Francisco, State of California products terminal.
- 325 Tons, New York, Queens mid-town tunnel, Contract 8; bids received by Tunnel Authority until May 10.
- 300 Tons, Agnew, Cal., ward unit No. 3, State Hospital; bids May 3.

280 Tons, Leavenworth, Kan., waterworks.

175 Tons, Cleveland, bars for two river piers, Main Street bridge, Lombardo Bros. Construction Co., Cleveland, low bidder.

100 Tons, New York, Hall of Nations' building, World's Fair.

100 Tons, Milwaukee, police station.

Tonnage not stated, Murphysboro, Tenn., Veteran's Bureau buildings; bids in May.

## Taxes More Than Earnings In Decade 1926 to 1935

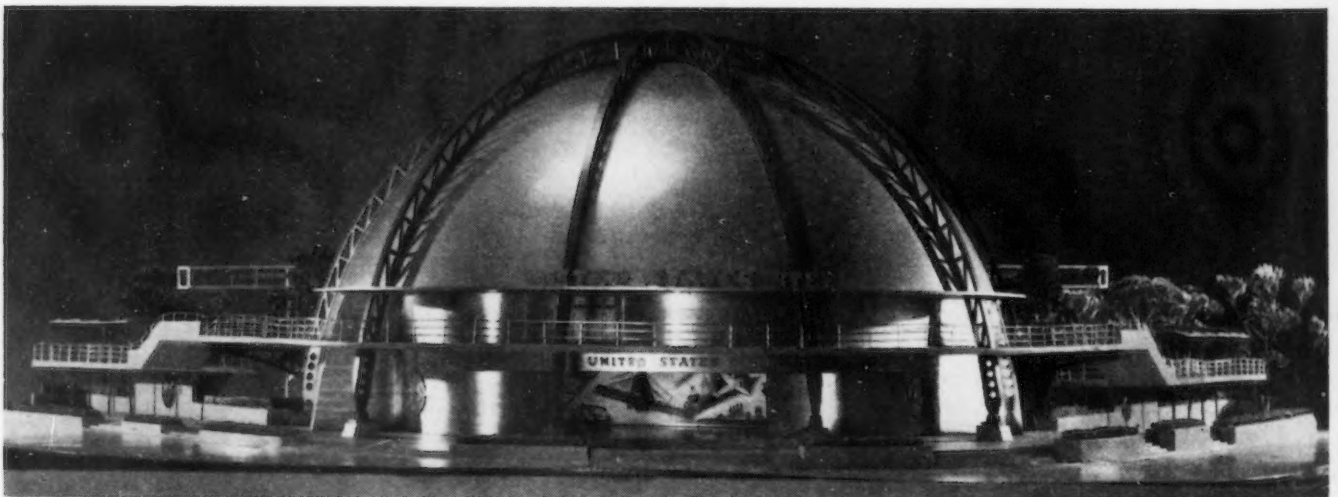
TAX collectors took 60c. out of every dollar of business earnings in the 10-year period from 1926 to 1935, inclusive, the Chamber of Commerce of the United States reports as the result of a survey just completed.

In that decade all active corporations, as a group, paid taxes amounting to \$29,735,000,000, or 44 per cent more than their earnings after deducting taxes. The combined earnings of such corporations was \$20,687,000,000.

## Dow Builds Plant For Synthetic Rubber

A PLANT for producing 2,000,000 lb. annually of Thiokol, synthetic rubber, has been erected at Midland, Mich., by Dow Chemical Co. Three basic steps involved in the manufacture of Thiokol, according to the makers, are the production of a polysulphide, reaction between this polysulphide and ethylene dichloride to form a synthetic rubber latex and the coagulation of the latex to form rubber crumb.

AN "inside out" hemispherical building of stainless steel will house United States Steel Corp.'s exhibits in the New York World's Fair of 1939. As shown in the model pictured above, the great dome, 66 ft. high and 132 ft. in diameter, covered with 28,000 sq. ft. of stainless steel, will be supported by external structural members. Anchored in concrete ten steel trusses will curve upward to meet 72 ft. above the ground, the overall height of the structure, which will rise a short distance east of the fair's "Theme Center."



## U. S. Steel Quarter Loss Is \$1,292,151

UNITED STATES STEEL CORP. and its subsidiaries reported a net deficit for the quarter ended March 31, 1938, of \$7,597,070 after depreciation, interest and preferred dividends of \$6,304,919.

The quarter's loss of \$1,292,151, before preferred but after other charges, compares with a net profit of \$4,591,505 in the fourth quarter of 1937 and a net profit of \$28,561,533 in the first period of last year.

The corporation's shipments were 35.3 per cent and production 32.3 per cent of capacity during the first quarter, said Edward R. Stettinius, Jr., newly-elected chairman of Steel's board. First quarter shipments of steel products totaled 1,565,244 tons, against 3,698,041 tons for the like period of 1937, a decrease of 57 per cent, Mr. Stettinius said.

Mr. Stettinius reported the corporation's unexpended balance for plant improvements on April 1 stood at \$56,000,000, its employees averaged 211,883 in the first quarter against 246,484 a year earlier, and the first period payroll totaled \$68,315,602 against \$104,536,228 in the like 1937 period.

Steel's directors voted the regular quarterly \$1.75 dividend on preferred shares, payable May 20 to stock of record April 28, and took no action on common dividends.

### H-P-M to Display Press At Franklin Institute

THE Hydraulic Press Mfg. Co., Mt. Gilead, Ohio, has been selected by the Franklin Institute, Philadelphia, to participate in a special exhibit of cellulose products to run three months. The exhibit is being prepared under the auspices of the Hercules Powder Co. H-P-M will display its model 25 injection molding press in actual operation molding a medallion of Franklin.

### Booklet Issued by U. S. On Strength of Materials

NEW data on strength of materials have been issued by the Army-Navy-Commerce Committee on Aircraft Requirements. Of general interest to all branches of the metal-working industry is the information on steel and aluminum alloys, miscellaneous alloys and non-metallic materials. The publication, known as

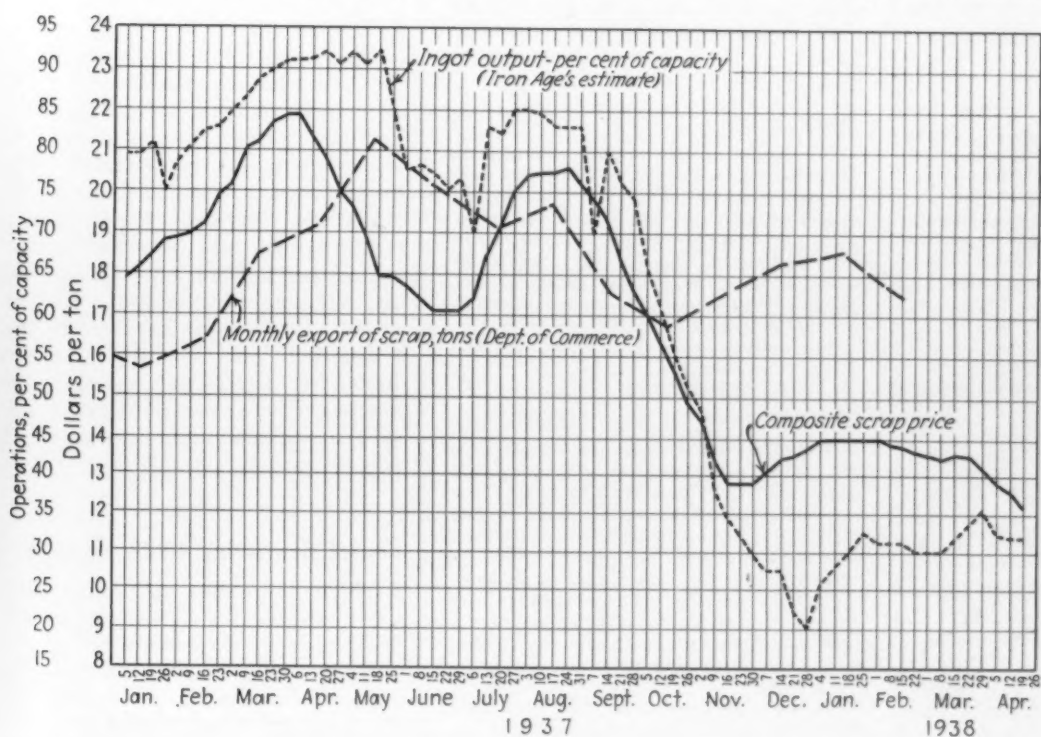
ANC-5 "Strength of Aircraft Elements" is available from the superintendent of documents, Washington, D. C., for 25c. The publication covers not only the strength of materials themselves, but also the most commonly used methods and formulae by which the strength of various structural components is calculated.

The book contains a section on basic principles and definitions, a study of types of failures, including instability failures of thin walled panels and columns. Particular attention is paid to failure under combined loadings.

### South Africa, Short of Scrap, to Ban Exports

LONDON (By Mail).—The scrap iron famine in South Africa continues unabated and of all British countries South Africa now appears to be the one most urgently in need of increased scrap supplies. To meet the situation the Union Government has been requested by the Board of Trade and Industries to prohibit the export from South Africa of all wrought iron, steel, and cast iron scrap and this request is likely to be adopted at an early date.

## Scrap Price Trend Compared with Steel Ingot Production



DURING the better part of 1937, the price trend of scrap served as a barometer of ingot output, anticipating steel mill production by a few weeks. Following the sale of about 500,000 tons of scrap to the European Cartel in November, however, the bulge in export shipments in later months was able to arrest the falling trend in scrap prices, despite the continued decline in operations. Now that export business is easing off, the price of scrap appears to be seeking its normal relationship with the melting rate.



# IRON AND STEEL SCRAP

**Further weakness at Pittsburgh and Philadelphia has brought composite down 33c. to \$11.92, new low for 1938.**

**A**PRIL 26.—Heavy melting steel and related grades are off 50c. a ton at Pittsburgh and Philadelphia, on the basis of small transactions. With prices unchanged at Chicago, the composite price has declined from \$12.25 last week to \$11.92, a new low for the year, and \$2.08 off from the January high of \$14. Principal activity is at Buffalo, where prices are steady although the tone is weak, with the navigation season opening up and letting Detroit's low prices have a softening effect. At St. Louis and Cincinnati quotations are off 25c. Boston export buying prices are down \$1. Chief strengthening factor in the present lethargic market is the apparent scarcity of No. 1 steel, although No. 2 is plentiful.

## Pittsburgh

With brokers having been able to pick up odd cars of No. 1 heavy melting at \$11.50 a ton and with at least two small tonnages sold into consumption at \$12 during the past week, No. 1 steel is now quotable at \$11.50 to \$12 a ton, off 50c. Although the aggregate tonnage of scrap bought for consumption amounted to only slightly over 1000 tons, the absence of major consumer buying makes current quotations amenable to small transactions. The apparent strength in railroad specialties is partly due to short covering on old higher priced orders.

## Chicago

Dealers bids range from \$11 to \$11.25, with some brokers offering as high as \$12 on certain grades of railroad steel. No. 1 steel is still quoted, however, at \$11 to \$11.50, as sentiment, in the absence of mill sales, does not yet seem to have strengthened past the \$11.50 top quotation. Some railroad lists have been withdrawn because of unsatisfactory offering prices.

## Cleveland

New sales into mill consumption remain conspicuously absent, and very little scrap is being produced or picked up by dealers. Despite the prolonged inactivity, however, most small yard dealers are managing to hold on to their material and very little distress scrap is being dumped. Marking the opening of the Great Lakes navigation season, a boatload of bundles arrived here last week for a local mill.

## Buffalo

The tone of the local scrap market continues weak, but the principal consumer is still purchasing No. 1 heavy melting steel at \$12 a ton, with other

grades at the usual price differential. More than 10,000 tons has been bought. Otherwise, the market is in the doldrums. Scattering small lots of cupola cast have been sold at around \$13.50 a ton. The first load of scrap from the Detroit area is expected around the first of the month.

## St. Louis

Dealers are not worried about covering their short interest on recent heavy purchases of scrap, although offerings are light. The Missouri-Kansas-Texas Railroad withdrew its list of 1300 tons of scrap because of the low prices offered. The Pennsylvania Railroad has a comparatively small list, 8000 tons. No further buying by mills is expected for the next 30 days.

## Cincinnati

The old materials market is still without sufficient activity to test prices. A small movement of material is reported on old contract. Price structures are weaker and dealers' bids have been reduced another 25c. Some distress offerings are reported with dealers wary of more material.

## Detroit

The prospect of absorbing considerably more tonnage of factory scrap is ahead of the Detroit scrap market as a depressing influence. Two of the most important lists for May are closing this week. The last of the important buying factors have withdrawn from the market in the last week, leaving scattered buying by the mills themselves as the only sustaining influence. This is hardly expected to serve to maintain prices.

## New York

No change is seen in the local picture. Material will continue to leave this port for some time to come, but no new export orders of any size are looked for in the next few months. Export buying prices are unchanged. Some heavy breakable cast has been bought for shipment into eastern Pennsylvania, and on the basis of the delivered price of \$13.50 a ton, buying prices here have been marked down \$1 on this grade.

## Boston

Weirton Steel Co. is offering \$1.45 a ton on cars for steel turnings or \$7.72 a ton, delivered, and \$4.25 to \$4.35 a ton for bushelling, or \$10.52 delivered. While such prices do not mean much to brokers, the mere fact that an offer is made is encouraging. The export market is down \$1 a ton on the principal grades and business is virtually at a standstill. A 7200-ton cargo cleared port for Japan last week upon completion of credit arrangements. At Providence, a cargo of 3400 tons was completed, and the vessel will take an additional load at Baltimore before sailing for Spain. Another boat

arrived at Providence last Saturday. Boston exporters have been advised that exports of scrap from Cuba have been prohibited for 18 months. The decree states the embargo is established in order to protect Cuban foundries. Recent exports, mostly cast iron, have been exceptionally heavy.

## Philadelphia

Brokers are paying \$12.50 for occasional lots of No. 1 steel, but every user in this area is confident that this figure represents the current top delivered price. Dealers are obtaining releases on No. 1 steel in preparation for an export boat due late this week, and another boat is expected on May 6 to carry Nos. 1 and 2 to Italy. The Kinka Maru, a crack new Japanese freighter, will touch Baltimore early in May for general cargo and 2000 tons of rails.

## Youngstown Deplores Increasing Taxes

**Y**OUNGSTOWN — YOUNGSTOWN SHEET & TUBE Co. and subsidiary companies report a net loss of \$139,529 for the first quarter of 1938 after deduction of \$1,687,877 for depletion and depreciation, compared to a net profit of \$4,886,019 in the first quarter of 1937.

Henry G. Dalton, chairman of the board, told shareholders at the annual meeting, Tuesday, April 26, that the continuing harassment of business by further new laws and regulations, imposition of higher taxes, and proposed government expenditures which will add to deficiencies in the national budget will not be productive of confidence.

"We can see no change ahead that will result in any improvement of our business in the near future," said Mr. Dalton, who went on to state that "we were hoping for more relief from taxes than now seems likely, and, with a proposed increase of expenditures on the part of the government increasing further the deficiencies in the budget, and continued harassing of business by further new laws and regulations, there will be little to expect from that source to increase confidence, which is first absolutely necessary to increase consumption on the part of private enterprise."

## Metal Statistics 1938 Edition

**T**HE 31st annual edition of *Metal Statistics*, the statistical reference book on iron, steel, nonferrous metal, fuel and miscellaneous subjects, has just been published. It is published by *American Metal Market*, 111 John Street, New York. Price: \$2 a copy.



# Iron and Steel Scrap Prices

## PITTSBURGH

Per gross ton delivered to consumer:	
No. 1 hvy. mltng. steel.	\$11.50 to \$12.00
Railroad hvy. mltng.	13.50 to 14.00
No. 2 hvy. mltng. steel	10.50 to 11.00
Scrap rails	15.00 to 15.50
Rails 3 ft. and under.	17.50 to 18.00
Comp. steel	11.50 to 12.00
Hand bundled sheets.	10.50 to 11.00
Hvy. steel axle turn.	10.00 to 10.50
Machine shop turn.	7.00 to 7.50
Short shov. turn.	7.00 to 7.50
Mixed bor. & turn.	6.00 to 6.50
Cast iron borings	6.00 to 6.50
Cast iron carwheels.	14.50 to 15.00
Hvy. breakable cast.	11.50 to 12.00
No. 1 cupola cast.	14.00 to 14.50
RR. knuckles & clprs.	16.00 to 16.50
Rail coil & leaf springs	16.50 to 17.00
Rolled steel wheels.	16.50 to 17.00
Low phos. billet crops.	16.50 to 17.00
Low phos. punchings.	16.00 to 16.50
Low phos. plate, hvy.	16.50 to 17.00
Low phos. plate clips.	14.50 to 15.00

## PHILADELPHIA

Per gross ton delivered to consumer:	
No. 1 hvy. mltng. steel.	\$12.50 to \$13.00
No. 2 hvy. mltng. steel.	10.50 to 11.00
Hydraulic bund., new.	12.50 to 13.00
Hydraulic bund., old.	9.00 to 9.50
Steel rails for rolling.	16.00 to 16.50
Cast iron carwheels.	14.50 to 15.00
Hvy. breakable cast.	13.50 to 14.00
No. 1 cast	15.00 to 15.50
Stove plate (steel wks.)	11.00 to 11.50
Railroad malleable	15.00 to 15.50
Machine shop turn.	7.00 to 7.25
No. 1 blast furnace.	6.00 to 6.50
Cast borings	6.00 to 6.50
Heavy axle turnings.	9.50 to 10.00
No. 1 low phos. hvy.	16.50 to 17.00
Couplers & knuckles.	16.00 to 16.50
Rolled steel wheels.	16.00 to 16.50
Steel axles	20.00 to 20.50
Shafting	19.00 to 19.50
No. 1 RR. wrought.	15.00 to 15.50
Spec. iron & steel pipe	12.00 to 12.50
No. 1 forge fire.	11.00 to 11.50
Cast borings (chem.)	12.50 to 13.00

## CHICAGO

Delivered to Chicago district consumers:	
Per Gross Ton	
Hvy. mltng. steel	\$11.00 to \$11.50
Auto. hvy. mltng. steel	
alloy free	9.50 to 10.00
No. 2 auto. steel.	9.00 to 9.50
Shoveling steel	11.00 to 11.50
Hydraul. comp. sheets.	10.00 to 10.50
Drop forge flashings.	8.75 to 9.25
No. 1 busheling	9.75 to 10.25
No. 2 busheling, old.	4.25 to 4.75
Rolled carwheels	13.50 to 14.00
Railroad tires, cut.	15.00 to 15.50
Railroad leaf springs.	14.50 to 15.00
Steel coup. & knuckles	13.50 to 14.00
Axle turnings	10.50 to 11.00
Coil springs	15.50 to 16.00
Axle turn. (elec.)	10.50 to 11.00
Low phos. punchings.	14.50 to 15.00
Low phos. plates, 12 in. and under	13.50 to 14.00
Cast iron borings	4.00 to 4.50
Short shov. turn.	5.50 to 6.00
Machine shop turn.	4.00 to 4.50
Rerolling rails	14.25 to 14.75
Steel rails under 3 ft.	14.50 to 15.00
Steel rails under 2 ft.	15.00 to 15.50
Angle bars, steel.	13.00 to 13.50
Cast iron carwheels.	12.75 to 13.25
Railroad malleable	12.25 to 12.75
Agric. malleable	11.00 to 11.50
Per Net Ton	
Iron car axles	\$17.00 to \$17.50
Steel car axles	15.50 to 16.00
No. 1 RR. wrought.	8.50 to 9.00
No. 2 RR. wrought	9.75 to 10.25
Locomotive tires	14.75 to 15.25
Pipes and flues	8.25 to 8.75
No. 1 machinery cast.	10.50 to 11.00
Clean auto. cast.	10.25 to 10.75
No. 1 railroad cast.	9.75 to 10.25
No. 1 agric. cast.	9.50 to 10.00
Stove plate	7.50 to 8.00
Grate bars	7.50 to 8.00
Brake shoes	7.00 to 7.50

## YOUNGSTOWN

Per gross ton delivered to consumer:	
No. 1 hvy. mltng. steel.	\$12.00 to \$12.50
Hydraulic bundles	11.50 to 12.00
Machine shop turn.	8.50 to 9.00

## CLEVELAND

Per gross ton delivered to consumer:	
No. 1 hvy. mltng. steel.	\$11.00 to \$11.50
No. 2 hvy. mltng. steel.	10.00 to 10.50
Comp. sheet steel	10.50 to 11.00
Light bund. stampings.	7.50 to 8.00
Drop forge flashings.	10.00 to 10.50
Machine shop turn.	6.00 to 6.50
Short shov. turn.	6.25 to 6.75
No. 1 busheling	10.00 to 10.50
Steel axe turnings	9.00 to 9.50
Low phos. billet and bloom crops	17.00 to 17.50
Cast iron borings	6.00 to 6.50
Mixed bor. & turn.	6.00 to 6.50
No. 2 busheling	6.00 to 6.50
No. 1 cast	15.00 to 15.50
Railroad grate bars	7.00 to 7.50
Stove plate	7.00 to 7.50
Rails under 3 ft.	16.50 to 17.00
Rails for rolling	15.00 to 15.50
Railroad malleable	15.00 to 15.50
Cast iron carwheels.	14.00 to 14.50

## BUFFALO

Per gross ton, f.o.b. consumers' plants:	
No. 1 hvy. mltng. steel.	\$11.50 to \$12.00
No. 2 hvy. mltng. steel.	9.50 to 10.00
Scrap rails	13.50 to 14.00
New hvy. b'ndled sheets	10.00 to 10.50
Old hydraulic bundles.	8.50 to 9.00
Drop forge flashings.	9.50 to 10.00
No. 1 busheling	9.50 to 10.00
Hvy. axle turnings.	9.50 to 10.00
Machine shop turn.	5.00 to 5.50
Knuckles & Couplers.	15.00 to 15.50
Coil & leaf springs.	15.00 to 15.50
Rolled steel wheels.	15.00 to 15.50
Low phos. billet crops.	16.00 to 16.50
Shov. turnings	7.00 to 7.50
Mixed bor. & turn.	5.50 to 6.00
Cast iron borings.	5.50 to 6.00
Steel car axles	15.00 to 15.50
No. 1 machinery cast.	14.00 to 14.50
No. 1 cupola cast.	12.50 to 13.00
Stove plate	11.00 to 11.50
Steel rails under 3 ft.	16.50 to 17.00
Cast iron carwheels.	13.00 to 13.50
Railroad malleable	12.50 to 13.00
Chemical borings	8.50 to 9.00

## ST. LOUIS

Dealers' buying prices per gross ton delivered to consumer:	
Selected hvy. melting.	\$10.50 to \$11.00
No. 1 hvy. melting.	10.50 to 11.00
No. 2 hvy. melting.	9.75 to 10.00
No. 1 locomotive tires.	11.50 to 12.00
Misc. stand. sec. rails.	11.50 to 12.00
Railroad springs	13.50 to 14.00
Bundled sheets	5.50 to 6.00
No. 1 busheling	7.00 to 7.50
Cast bor. & turn.	3.00 to 3.50
Rails for rolling	13.00 to 13.50
Machine shop turn.	3.00 to 3.50
Heavy turnings	8.00 to 8.50
Steel car axles	17.00 to 17.50
Iron car axles	19.50 to 20.00
No. 1 RR. wrought.	7.50 to 8.00
No. 2 RR. wrought.	10.00 to 10.50
Steel rails under 3 ft.	13.00 to 13.50
Steel angle bars	12.00 to 12.50
Cast iron carwheels.	11.50 to 12.00
No. 1 machinery cast.	12.00 to 12.50
Railroad malleable	11.00 to 11.50
No. 1 railroad cast.	10.50 to 11.00
Stove plate	6.50 to 7.00
Agricul. malleable	10.00 to 10.50
Grate bars	6.50 to 7.00
Brake shoes	6.50 to 7.00

## CINCINNATI

Dealers' buying prices per gross ton at yards:	
No. 1 hvy. mltng. steel.	\$8.00 to \$8.50
No. 2 hvy. mltng. steel.	6.00 to 6.50
Scrap rails for mltng.	13.00 to 13.50
Loose sheet clippings.	3.75 to 4.25
Hydrau. b'ndled sheets.	7.50 to 8.00
Cast iron borings	2.00 to 2.50
Machine shop turn.	2.50 to 3.00
No. 1 busheling	6.50 to 7.00
No. 2 busheling	1.50 to 2.00
Rails for rolling	15.00 to 15.50
No. 1 locomotive tires.	11.50 to 12.00
Short rails	15.50 to 16.00
Cast iron carwheels.	10.00 to 10.50
No. 1 machinery cast.	10.00 to 10.50
No. 1 railroad cast.	8.50 to 9.00
Burnt cast	5.00 to 5.50
Stove plate	5.00 to 5.50
Agricul. malleable	9.50 to 10.00
Railroad malleable	11.50 to 12.00
Mixed hvy. cast	7.00 to 7.50

## BIRMINGHAM

Per gross ton delivered to consumer:	
Hvy. melting steel.	\$11.50 to \$12.00
Scrap steel rails	14.00 to 14.50
Short shov. turnings.	7.50 to 8.10
Stove plate	9.00 to 10.00
Steel axles	15.00 to 16.00
Iron axles	15.00 to 16.00
No. 1 RR. wrought.	10.00
Rails for rolling	15.00 to 16.00
No. 1 cast	14.00 to 16.50
Tramcar wheels	14.00 to 15.00

## DETROIT

Dealers' buying prices per gross ton:	
No. 1 hvy. mltng. steel.	\$7.00 to \$7.50
No. 2 hvy. mltng. steel.	6.00 to 6.50
Borings and turnings.	3.50 to 4.00
Long turnings	3.50 to 4.00
Short shov. turnings.	4.25 to 4.75
No. 1 machinery cast.	11.75 to 12.25
Automotive cast	12.75 to 13.25
Hvy. breakable cast.	10.00 to 10.50
Hydraul. comp. sheets	7.75 to 8.25
Stove plate	6.75 to 7.25
New factory bushel.	6.50 to 7.00
Old No. 2 busheling.	2.50 to 3.00
Sheet clippings	4.50 to 5.00
Flashings	6.00 to 6.50
Low phos. plate scrap.	8.00 to 8.50

## NEW YORK

Dealers' buying prices per gross ton on cars:	
No. 1 hvy. mltng. steel.	\$9.00 to \$9.50
No. 2 hvy. mltng. steel.	7.50 to 8.00
Hvy. breakable cast.	9.00 to 9.50
No. 1 machinery cast.	11.50 to 12.00
No. 2 cast	7.50 to 8.00
Stove plate	6.50 to 7.00
Steel car axles	20.00 to 20.50
Shafting	15.00 to 15.50
No. 1 RR. wrought.	11.50 to 12.00
No. 1 wrought long.	10.00 to 10.50
Spec. iron & steel pipe	9.00 to 9.50
Rails for rolling	16.00 to 16.50
Clean steel turnings.	3.00 to 3.50
Cast borings*	3.00 to 3.50
No. 1 blast furnace.	3.00 to 3.50
Cast borings (chem.)	9.50 to 10.00
Unprepared yard scrap	7.00 to 7.50
Light iron	3.50 to 4.00
Per gross ton, delivered local foundries:	
No. 1 machn. cast.	\$14.00 to \$15.00
No. 2 cast	11.50 to 12.00

\*\$1.50 less for truck loads.

## BOSTON

Dealers' buying prices per gross ton:	
No. 1 hvy. mltng. steel.	\$13.30 to \$13.80
Scrap rails	13.30 to 13.80
No. 2 steel	12.30 to 12.80
Breakable cast	9.75
Machine shop turn.	1.45
Mixed bor. & turn.	1.45
Bun. skeleton long.	4.25 to 4.35
Shafting	17.00 to 17.50
Cast bor. chemical.	6.00 to 6.50
Per gross ton delivered consumers' yards:	
Textile cast	15.00 to 15.50
No. 1 machine cast.	15.00 to 15.50

## PACIFIC COAST

Per gross ton delivered to consumer:	
No. 1 hvy. mltng. steel.	\$11.65 to \$12.15
No. 2 hvy. mltng. steel.	10.65 to 11.15

## CANADA

Dealers' buying prices at their yards, per gross ton:	
Toronto Montreal	
No. 1 hvy. mltng. steel.	\$10.50 \$9.50
No. 2 hvy. mltng. steel.	9.50 8.50
Mixed dealers steel.	8.50 7.50
Scrap pipe	8.50 7.50
Steel turnings	7.50 7.00
Cast borings	8.50 7.50
Machinery cast	15.00 14.00
Dealers cast	13.00 12.00
Stove plate	11.00 10.50

## EXPORT

Dealers' buying prices per gross ton:	
New York, truck lots, delivered, bargas	
No. 1 hvy. mltng. steel.	\$11.50
No. 2 hvy. mltng. steel.	10.00
No. 2 cast	9.50
Stove plate	7.00 to 8.00
Boston on cars at Army Base or Mystic Wharf	
No. 1 hvy. mltng. steel.	\$11.50
No. 2 hvy. mltng. steel.	10.50
Rails (scrap)	11.50
Philadelphia, delivered alongside boats, Port Richmond	
No. 1 hvy. mltng. steel.	\$12.50 to \$13.00
No. 2 hvy. mltng. steel.	11.00 to 11.50

# PRICES ON FINISHED AND SEMI-FINISHED IRON AND STEEL

## SEMI-FINISHED STEEL

### Billets, Blooms and Slabs

F.o.b. Pittsburgh, Chicago, Gary, Cleveland, Youngstown, Buffalo, Birmingham. Prices at Duluth are \$2 a ton higher, and delivered Detroit \$3 higher.

Per Gross Ton  
Re-rolling ..... \$37.00  
Forging quality ..... 43.00

### Sheet Bars

F.o.b. Pittsburgh, Chicago, Cleveland, Youngstown, Buffalo, Canton, Sparrows Point, Md.

Per Gross Ton  
Open-hearth or Besse-mer ..... \$37.00

### Skelp

F.o.b. Pittsburgh, Chicago, Youngstown, Buffalo, Coatesville, Pa., Sparrows Point, Md.

Per Lb.  
Grooved, universal and sheared ..... 2.10c.

### Wire Rods

(No. 5 to 9/32 in.)

Per Gross Ton  
F.o.b. Pittsburgh or Cleveland ..... \$47.00  
F.o.b. Chicago, Youngstown or Anderson, Ind. .... 48.00  
F.o.b. Worcester, Mass. .... 49.00  
F.o.b. Birmingham ..... 50.00  
F.o.b. San Francisco ..... 56.00  
F.o.b. Galveston ..... 53.00  
Rods over 9/32 in. or 47/64 in., inclusive, \$5 a ton over base.

## BARS, PLATES, SHAPES

### Iron and Steel Bars

#### Soft Steel

Base per Lb.  
F.o.b. Pittsburgh ..... 2.45c.  
F.o.b. Chicago or Gary ..... 2.50c.  
F.o.b. Duluth ..... 2.60c.  
Del'd Detroit ..... 2.60c.  
F.o.b. Cleveland ..... 2.50c.  
F.o.b. Buffalo ..... 2.55c.  
Del'd Philadelphia ..... 2.77c.  
Del'd New York ..... 2.81c.  
F.o.b. Birmingham ..... 2.60c.  
F.o.b. cars dock Gulf ports ..... 2.85c.  
F.o.b. cars Pacific ports ..... 3.00c.

#### Rail Steel

(For merchant trade)  
F.o.b. Pittsburgh ..... 2.30c.  
F.o.b. Cleveland, Chicago, Gary or Moline, Ill. .... 2.35c.  
F.o.b. Buffalo ..... 2.40c.  
F.o.b. Birmingham ..... 2.45c.  
F.o.b. cars dock Gulf ports ..... 2.70c.  
F.o.b. cars dock Pacific ports ..... 2.85c.

#### Billet Steel Reinforcing

(Straight lengths as quoted by distributors)  
F.o.b. Pittsburgh ..... 2.45c.  
F.o.b. Buffalo, Cleveland, Youngstown, Chicago, Gary or Birmingham ..... 2.50c.  
Del'd Detroit ..... 2.60c.  
F.o.b. cars dock Gulf ports ..... 2.85c.  
F.o.b. cars dock Pacific ports ..... 2.95c.

#### Rail Steel Reinforcing

(Straight lengths as quoted by distributors)  
F.o.b. Pittsburgh ..... 2.30c.  
F.o.b. Buffalo, Cleveland, Youngstown, Chicago, Gary or Birmingham ..... 2.35c.  
F.o.b. cars dock Gulf ports ..... 2.70c.  
F.o.b. cars dock Pacific ports ..... 2.80c.

### Iron

F.o.b. Chicago ..... 2.40c.  
F.o.b. Pittsburgh (refined) ..... 3.60c.

#### Cold Finished Bars and Shafting\*

Base Per Lb.  
F.o.b. Pittsburgh ..... 2.90c.  
F.o.b. Cleveland, Chicago and Gary ..... 2.95c.  
F.o.b. Buffalo ..... 3.00c.  
F.o.b. Detroit ..... 2.95c.

\* In quantities of 10,000 to 19,999 lb.

### Plates

Base Per Lb.  
F.o.b. Pittsburgh ..... 2.25c.  
F.o.b. Chicago or Gary ..... 2.30c.  
Del'd Cleveland ..... 2.45c.  
F.o.b. Coatesville or Spar. Pt. .... 2.35c.  
Del'd Philadelphia ..... 2.445c.  
Del'd New York ..... 2.55c.

F.o.b. Birmingham ..... 2.40c.  
F.o.b. cars dock Gulf ports ..... 2.65c.  
F.o.b. cars dock Pacific ports ..... 2.80c.  
Wrought iron plates, f.o.b. Pittsburgh ..... 3.80c.

### Floor Plates

F.o.b. Pittsburgh ..... 3.50c.  
F.o.b. Chicago ..... 3.55c.  
F.o.b. Coatesville ..... 3.60c.  
F.o.b. cars dock Gulf ports ..... 3.90c.  
F.o.b. cars dock Pacific ports ..... 4.05c.

### Structural Shapes

Base per Lb.  
F.o.b. Pittsburgh ..... 2.25c.  
F.o.b. Chicago ..... 2.30c.  
Del'd Cleveland ..... 2.45c.  
F.o.b. Buffalo or Bethlehem ..... 2.35c.  
Del'd Philadelphia ..... 2.465c.  
Del'd New York ..... 2.52c.  
F.o.b. Birmingham (standard) ..... 2.40c.  
F.o.b. cars dock Gulf ports ..... 2.65c.  
F.o.b. cars dock Pacific ports ..... 2.80c.

### Steel Sheet Piling

Base per Lb.  
F.o.b. Pittsburgh ..... 2.60c.  
F.o.b. Chicago or Buffalo ..... 2.70c.  
F.o.b. cars dock Gulf or Pacific Coast ports ..... .05c.

## RAILS AND TRACK SUPPLIES

### F.o.b. Mill

Standard rails, heavier than 60 lb., per gross ton ..... \$42.50  
Angle bars, per 100 lb. .... 2.80

### F.o.b. Basing Points

Light rails (from billets) per gross ton ..... \$43.00  
Light rails (from rail steel) per gross ton ..... 42.00

Base per Lb.  
Spikes ..... 3.15c.  
Tie plates, steel ..... 2.30c.  
Tie plates, Pacific Coast ports ..... 2.40c.  
Track bolts, to steam railroads ..... 4.35c.  
Track bolts, to jobbers, all sizes (per 100 counts) ..... 65-5 per cent off list

Basing points on light rails are Pittsburgh, Chicago and Birmingham; on spikes and tie plates, Pittsburgh, Chicago, Portsmouth, Ohio, Weirton, W. Va., St. Louis, Kansas City, Minnequa, Colo., Birmingham and Pacific Coast ports; on tie plates alone, Steelton, Pa., Buffalo; on spikes alone, Youngstown, Lebanon, Pa., Richmond, Va.

## SHEETS, STRIP, TIN PLATE

### TERNE PLATE

#### Sheets

#### Hot Rolled

Base per Lb.  
No. 10 f.o.b. Pittsburgh ..... 2.40c.  
No. 10, f.o.b. Gary ..... 2.50c.  
No. 10, del'd Detroit ..... 2.60c.  
No. 10, del'd Philadelphia ..... 2.72c.  
No. 10, f.o.b. Granite City ..... 2.60c.  
No. 10, f.o.b. Birmingham ..... 2.55c.  
No. 10, f.o.b. cars dock Pacific ports ..... 2.95c.  
No. 10, wrought iron, P'gh. .... 4.25c.

#### Hot Rolled Annealed

No. 24, f.o.b. Pittsburgh ..... 3.15c.  
No. 24, f.o.b. Gary ..... 3.25c.  
No. 24, del'd Detroit ..... 3.35c.  
No. 24, del'd Philadelphia ..... 3.47c.  
No. 24, f.o.b. Granite City ..... 3.35c.  
No. 24, f.o.b. Birmingham ..... 3.30c.  
No. 24, f.o.b. cars dock Pacific ports ..... 3.80c.  
No. 24, wrought iron, Pittsburgh ..... 5.15c.

#### Heavy Cold Rolled\*

No. 10 gage, f.o.b. Pittsburgh ..... 3.00c.  
No. 10 gage, f.o.b. Gary ..... 3.10c.  
No. 10 gage, f.o.b. Detroit ..... 3.20c.  
No. 10 gage, del'd Philadelphia ..... 3.32c.  
No. 10, f.o.b. Granite City ..... 3.20c.  
No. 10 gage, f.o.b. Birmingham ..... 3.15c.  
No. 10 gage, f.o.b. cars dock Pacific ports ..... 3.60c.

#### Light Cold Rolled\*

No. 20 gage, f.o.b. Pittsburgh ..... 3.45c.  
No. 20 gage, f.o.b. Gary ..... 3.55c.  
No. 20 gage, del'd Detroit ..... 3.65c.  
No. 20 gage, del'd Philadelphia ..... 3.77c.  
No. 20, f.o.b. Granite City ..... 3.65c.  
No. 20 gage, f.o.b. Birmingham ..... 3.60c.  
No. 20 gage, f.o.b. cars, dock Pacific ports ..... 4.00c.

\* Mill run sheets are 10c. per 100 lb. less than base; and primes only, 25c. above base.

### Galvanized Sheets

No. 24 gage, f.o.b. Pittsburgh ..... 3.80c.  
No. 24, f.o.b. Gary ..... 3.90c.  
No. 24, del'd Philadelphia ..... 4.12c.

No. 24, f.o.b. Granite City ..... 4.00c.  
No. 24, f.o.b. Birmingham ..... 3.95c.  
No. 24, f.o.b. cars dock Pacific ports ..... 4.40c.  
No. 24, wrought iron, Pittsburgh ..... 6.10c.

### Electrical Sheets

(F.o.b. Pittsburgh)

Base per Lb.  
Field grade ..... 3.35c.  
Armature ..... 3.70c.  
Electrical ..... 4.20c.  
Special Motor ..... 5.10c.  
Special Dynamo ..... 5.80c.  
Transformer ..... 6.30c.  
Transformer Special ..... 7.30c.  
Transformer Extra Special ..... 7.80c.

Base gage changed from 28 to 24 gage. Gage extras are the same as those applying on hot-rolled, annealed sheets with few exceptions.  
Silicon Strip in coils—Sheet price plus silicon sheet extra width extras plus 25c. per 100 lb. for coils.

### Long Ternes

No. 24, unassorted 8-lb. coating f.o.b. Pittsburgh ..... 4.10c.  
F.o.b. Gary ..... 4.20c.  
F.o.b. cars dock Pacific ports ..... 4.80c.

### Vitreous Enameling Stock

No. 20, f.o.b. Pittsburgh ..... 3.50c.  
No. 20, f.o.b. Gary ..... 3.60c.  
No. 20, f.o.b. Granite City ..... 3.70c.  
No. 20, f.o.b. cars dock Pacific ports ..... 4.10c.

### Tin Mill Black Plate

No. 28, f.o.b. Pittsburgh, per lb. .... 3.30c.  
No. 28, Gary ..... 3.40c.  
No. 28, f.o.b. Granite City ..... 3.50c.  
No. 28, cars dock Pacific ports, boxed ..... 4.175c.

### Tin Plate

Base per Box  
Standard cokes, f.o.b. Pittsburgh district mill ..... \$5.35  
Standard cokes, f.o.b. Gary ..... 5.45  
Standard coke, f.o.b. Granite City ..... 5.55

### Special Coated Manufacturing Ternes

Base per Box  
F.o.b. Pittsburgh ..... \$4.65  
F.o.b. Gary ..... 4.75  
F.o.b. Granite City ..... 4.85

### Roofing Terne Plate

(F.o.b. Pittsburgh)

(Per Package, 112 sheets, 20 x 28 in.)  
8-lb. coating I.C. .... \$12.00  
15-lb. coating I.C. .... 14.00  
20-lb. coating I.C. .... 15.00  
25-lb. coating I.C. .... 16.00  
30-lb. coating I.C. .... 17.25  
40-lb. coating I.C. .... 19.50

### Hot-rolled Hoops, Bands, Strip and Flats under 1/4 in.

Base per Lb.  
All widths up to 24 in., Pittsburgh ..... 2.40c.  
All widths up to 24 in., Chicago ..... 2.50c.  
All widths up to 24 in., del'd Detroit ..... 2.60c.  
All widths up to 24 in., Granite City ..... 2.60c.  
All widths up to 24 in., Birmingham ..... 2.55c.  
Cooperage stock, Pittsburgh ..... 2.50c.  
Cooperage stock, Chicago ..... 2.60c.

### Cold Rolled Strip\*

Base per Lb.  
F.o.b. Pittsburgh ..... 3.20c.  
F.o.b. Cleveland ..... 3.20c.  
Del'd Chicago ..... 3.49c.  
F.o.b. Worcester ..... 3.40c.

\* Carbon 0.25 and less.

### Cold Rolled Spring Steel

Pittsburgh and Cleveland Worcester  
Carbon 0.25-0.50% ..... 3.20c. 3.40c.  
Carbon .51-.75 ..... 4.45c. 4.65c.  
Carbon .76-1.00 ..... 6.50c. 6.50c.  
Carbon Over 1.00 ..... 8.50c. 8.70c.

### Commodity Cold Rolled Strip

No. 14, Pittsburgh or Cleveland ..... 3.35c.  
No. 14, Worcester ..... 3.75c.  
No. 20, Pittsburgh or Cleveland ..... 3.75c.  
No. 20, Worcester ..... 4.15c.



## WIRE PRODUCTS

(Carload lots, f.o.b. Pittsburgh and Cleveland)  
To Manufacturing Trade

	Per Lb.
Bright wire .....	2.90c.
Galvanized wire .....	2.95c.
Spring wire .....	3.50c.

Chicago prices on products sold to the manufacturing trade are \$1 a ton above Pittsburgh or Cleveland. Worcester and Duluth prices are \$3 a ton above, Birmingham \$3 above, and Pacific Coast prices \$9 a ton above Pittsburgh or Cleveland.

	Base per Keg
Standard wire nails .....	\$2.75
Smooth coated nails .....	2.75
Cut nails, carloads .....	3.60

	Base per 100 Lb.
Annealed fence wire .....	\$3.15
Galvanized fence wire .....	3.55
Polished staples .....	3.45
Galvanized staples .....	3.70
Barbed wire, galvanized .....	3.40
Twisted barbed wire .....	3.40
Woven wire fence, base column. 74	
Single loop bale ties, base col. 63	

Chicago and Anderson, Ind., mill prices are \$1 a ton over Pittsburgh base (on all products except woven wire fence, for which the Chicago price is \$2 above Pittsburgh); Duluth, Minn., mill prices are \$2 a ton over Pittsburgh, except for woven wire fence, which is \$3 over Pittsburgh and Birmingham mill prices are \$3 a ton over Pittsburgh.

On wire nails, barbed wire and staples, prices at Houston, Galveston and Corpus Christi, Tex., New Orleans, Lake Charles, La., and Mobile, Ala., are \$6 a ton over Pittsburgh.

On nails, staples and barbed wire, prices of \$6 a ton over Pittsburgh are also quoted at Beaumont and Orange, Tex.

## STEEL AND WROUGHT IRON PIPE AND TUBING

Welded Pipe  
Base Discounts, f.o.b. Pittsburgh  
District and Lorain, Ohio, Mills  
F.o.b. Pittsburgh only on wrought iron pipe.

Butt Weld		Wrought Iron	
In.	Black Galv.	In.	Black Galv.
1/4	52 31	1/4 & 3/8	+13 +35
1/2	55 38 1/2	1/2	20 1 1/2
3/4	59 49	3/4	26 8
1	62 53	1 & 1 1/4	30 14
1 to 3	64 55 1/2	1 1/2	34 16 1/2
		2	33 16

Lap Weld		strong, plain ends	
In.	Black Galv.	In.	Black Galv.
2	57 47 1/2	2	26 10
2 1/2 & 3	60 50 1/2	2 1/2 to 3 1/2	27 12 1/2
3 1/2 to 6	62 52 1/2	4	29 16
7 & 8	61 50 1/2	4 1/2 to 8	28 15
9 & 10	60 50	9 to 12	24 10
11 & 12	59 49		

On butt-weld and lap-weld steel pipe jobbers are granted a discount of 5%. On less-than-carload shipments prices are determined by adding 25 and 30% and the carload freight rate to the base card.

Note—Chicago district mills have a base two points less than the above discounts. Chicago delivered base is 2 1/2 points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

## Boiler Tubes

Seamless Steel Commercial Boiler Tubes and Locomotive Tubes  
(Net base prices per 100 ft. f.o.b. Pittsburgh in carload lots)

	Cold Drawn	Hot Rolled
1 in. o.d. ....	13 B.W.G. \$ 9.46	\$ 8.41
1 1/4 in. o.d. ....	13 B.W.G. 11.21	9.96
1 1/2 in. o.d. ....	13 B.W.G. 12.38	11.00
1 3/4 in. o.d. ....	13 B.W.G. 14.09	12.51
2 in. o.d. ....	13 B.W.G. 15.78	14.02
2 1/4 in. o.d. ....	13 B.W.G. 17.60	15.63
2 1/2 in. o.d. ....	12 B.W.G. 19.37	17.21
2 3/4 in. o.d. ....	12 B.W.G. 21.22	18.85
3 in. o.d. ....	12 B.W.G. 22.49	19.98
3 1/2 in. o.d. ....	12 B.W.G. 23.60	20.97
4 in. o.d. ....	10 B.W.G. 45.19	40.15
4 1/2 in. o.d. ....	11 B.W.G. 29.79	26.47
5 in. o.d. ....	9 B.W.G. 36.96	32.83
5 1/2 in. o.d. ....	9 B.W.G. 56.71	50.38
6 in. o.d. ....	7 B.W.G. 87.07	77.35

Extra for less-carload quantities:

	Base
40,000 lb. or ft. or over .....	5%
30,000 lb. or ft. to 39,999 lb. or ft. ....	10%
20,000 lb. or ft. to 29,999 lb. or ft. ....	20%
10,000 lb. or ft. to 19,999 lb. or ft. ....	30%
5,000 lb. or ft. to 9,999 lb. or ft. ....	45%
Under 2,000 lb. or ft. ....	65%

## CAST IRON WATER PIPE

	Per Net Ton
*6-in. and larger, del'd Chicago	\$55.00
6-in. and larger, del'd New York	53.00
*6-in. and larger, Birmingham	47.00
6-in. and larger, f.o.b. dock, San Francisco or Los Angeles	56.00
F.o.b. dock, Seattle	56.00
4-in. f.o.b. dock, San Francisco or Los Angeles	59.00
F.o.b. dock, Seattle	56.00

Class "A" and gas pipe, \$3 extra  
4-in. pipe is \$3 a ton above 6-in.

Prices for lots of less than 200 tons. For 200 tons and over, 6-in. and larger is \$46, Birmingham, and \$54 delivered Chicago and 4-in. pipe, \$49, Birmingham, and \$58 delivered Chicago.

## BOLTS, NUTS, RIVETS, SET SCREWS

Bolts and Nuts	
(F.o.b. Pittsburgh, Cleveland, Birmingham or Chicago)	
Per Cent Off List	
Machine and carriage bolts:	
1/2 in. & 6 in. and smaller	.65 and 5*
Larger and longer up to	
1 in. ....	.60 and 10*
1 1/4 in. and larger	.60 and 5*
Lag bolts	.60 and 10
Plow bolts, Nos. 1, 2, 3	
and 7	.65 and 5
Hot pressed nuts, and c.p.c. and t nuts, square or hex. blank or tapped:	
1/2 in. and smaller	.65
9/16 in. to 1 in. inclusive	.60 and 5
1 1/8 in. and larger	.60

\* Less carload lots and less than full container quantity. Less carloads lots in full container quantity, an additional 10 per cent discount; carload lots and full container quantity, still another 5 per cent discount.

Semi-finished hexagon units, U.S.S. and S.A.E.:

1/2 in. and smaller	.60 and 10
3/8 in. to 1 in. inclusive	.60 and 5
1 in. and larger	.60

Stove bolts in packages, nuts attached ..... 70

Stove bolts in packages, with nuts separate ..... 70 and 10

Stove bolts in bulk ..... 80

On stove bolts freight is allowed to destination on 200 lb. and over.

Large Rivets  
(1/2-in. and larger)  
Base per 100 Lb.  
F.o.b. Pittsburgh or Cleveland \$3.60  
F.o.b. Chicago or Birmingham.. 3.70

Small Rivets  
(7/16-in. and smaller)  
Per Cent Off List  
F.o.b. Pittsburgh ..... .65 and 5  
F.o.b. Cleveland ..... .65 and 5  
F.o.b. Chicago and Birmingham ..... .65 and 5

Cap and Set Screws  
(Freight allowed up to but not exceeding 65c. per 100 lb. on lots of 200 lb. or more)

Per Cent Off List  
Milled cap screws, 1 in. dia. and smaller ..... .50 and 10  
Milled standard set screws, case hardened, 1 in. dia. and smaller 75  
Milled headless set screws, cut thread 3/4 in. and smaller ..... 75  
Upset hex. head cap screws U.S.S. or S.A.E. thread 1 in. and smaller ..... .70 and 5  
Upset set screws, cup and oval points ..... .80 and 5  
Milled studs ..... 65

## Alloy and Stainless Steel

Alloy Steel Blooms, Billets and Slabs  
F.o.b. Pittsburgh, Chicago, Canton, Massillon, Buffalo, Bethlehem.  
Base price, \$60 a gross ton.

Alloy Steel Bars  
F.o.b. Pittsburgh, Chicago, Buffalo, Bethlehem, Massillon or Canton.  
Open-hearth grade, base ..... 3.00c.  
Delivered, Detroit ..... 3.15c.  
S.A.E. Alloy  
Series Differential  
Numbers per 100 Lb.  
200 (1 1/2% Nickel) ..... \$0.35  
2100 (1 1/4% Nickel) ..... 0.75  
2300 (3 1/2% Nickel) ..... 1.55

2500 (5% nickel) .....	\$2.25
3100 Nickel-chromium .....	0.70
3200 Nickel-chromium .....	1.35
3300 Nickel-chromium .....	3.80
3400 Nickel-chromium .....	3.20
4100 Chromium-molybdenum (0.15 to 0.25 Molybdenum) .....	0.55
4100 Chromium-molybdenum (0.25 to 0.40 Molybdenum) .....	0.75
4600 Nickel-molybdenum (0.20 to 0.30 Mo. 1.50 to 2.00 Ni) .....	1.10
5100 Chrome steel (0.60-0.90 Cr.) .....	0.35
5100 Chrome steel (0.80-1.10 Cr.) .....	0.45
5100 Chromium spring steel .....	0.15
6100 Chromium-vanadium bar .....	1.20
6100 Chromium-vanadium spring steel .....	0.85
Chromium-nickel-vanadium .....	1.50
Carbon-vanadium .....	0.85

These prices are for hot-rolled steel bars. The differential for most grades in electric furnace steel is 50c. higher. Slabs with a section area of 16 in. and 2 1/2 in. thick or over take the billet base.

Alloy Cold-Finished Bars  
F.o.b. Pittsburgh, Chicago, Gary, Cleveland or Buffalo, 3.60c. base per lb. Delivered Detroit, 3.75c., carlots.

## CORROSION & HEAT RESISTANT ALLOYS

(Base prices, cents per lb., f.o.b. Pittsburgh)

Chrome-Nickel			
	No. 304	No. 302	
Forging billets	21.25c.	20.40c.	
Bars	25c.	24c.	
Plates	29c.	27c.	
Structural shapes	25c.	24c.	
Sheets	36c.	34c.	
Hot-rolled strip	23.50c.	21.50c.	
Cold-rolled strip	30c.	28c.	
Drawn wire	25c.	24c.	

Straight Chrome			
	No. 410	No. 430	No. 442
Bars	18.50c.	19c.	22.50c.
Plates	21.50c.	22c.	25.50c.
Sheets	26.50c.	29c.	32.50c.
Hot strip	17c.	17.50c.	23c.
Cold stp.	22c.	22.50c.	28.50c.

## TOOL STEEL

High speed .....	67c.
High-carbon-chrome .....	43c.
Oil-hardening .....	24c.
Special .....	22c.
Extra .....	18c.
Regular .....	14c.

Prices for warehouse distribution to all points on or East of Mississippi River are 2c. a lb. higher. West of Mississippi quotations are 3c. a lb. higher.

## British and Continental

### BRITISH

Per Gross Ton  
f.o.b. United Kingdom Ports  
Ferromanganese, export ..... £20 Nominal  
Tin plate, per base box  
20s. 3d. to 20s. 6d.  
Steel bars, open hearth ..... £11  
Beams, open-hearth ..... £10 12s. 6d.  
Channels, open-hearth ..... £10 17s. 6d.  
Angles, open-hearth ..... £10 12s. 6d.  
Black sheets, No. 24 gage, £14  
Galvanized sheets, No. 24 gage ..... £16 15s.

### CONTINENTAL

Per Gross Ton, Gold £.  
f.o.b. Continental Ports  
Billets, Thomas ..... Nominal  
Wire rods, No. 5 B.W.G. ..... £5 10s.  
Steel bars, merchant ..... £5 5s.  
Sheet bars ..... Nominal  
Plate 1/4 in. and up ..... £6 7s.  
Plate 3/16 in. and 5 mm. ..... £6 13s.  
Sheet, 1/4 in. .... £7 8d.  
Beams, Thomas ..... £4 18s.  
Angles (Basic) ..... £4 18s.  
Hoops and strip, base ..... £5 15s.



## RAW MATERIALS PRICES

### PIG IRON

#### No. 2 Foundry

F.o.b. Everett, Mass.	\$25.75
F.o.b. Bethlehem, Birdsboro and Swedeland, Pa., and Sparrows Point, Md.	25.00
Delivered Brooklyn	27.50
Delivered Newark or Jersey City	26.53
Delivered Philadelphia	25.84
F.o.b. Neville Island, Sharpsville and Erie, Pa.; Buffalo, Youngstown, Cleveland, Toledo and Hamilton, Ohio; Detroit; Chicago and Granite City, Ill.	24.00
Delivered Cincinnati	24.44
F.o.b. Duluth	24.50
F.o.b. Provo, Utah	22.00
Delivered, San Francisco, Los Angeles or Seattle	26.95
F.o.b. Birmingham*	20.38

\* Delivered prices on southern iron for shipment to northern points are 38c. a ton below delivered prices from nearest northern basing point on iron with phosphorus content of 0.70 per cent and over.

#### Malleable

Base prices on malleable iron are 50c. a ton above No. 2 foundry quotations at Everett, Eastern Pennsylvania furnaces, Erie and Buffalo. Elsewhere they are the same, except at Birmingham and Provo, which are not malleable iron basing points.

#### Basic

F.o.b. Everett, Mass.	\$25.25
F.o.b. Bethlehem, Birdsboro, Swedeland and Steelton, Pa., and Sparrows Point, Md.	24.50
F.o.b. Buffalo	23.00
F.o.b. Neville Island, Sharpsville and Erie, Pa.; Youngstown, Cleveland, Toledo and Hamilton, Ohio; Detroit; Chicago and Granite City, Ill.	23.50
Delivered Cincinnati	24.61
Delivered Canton, Ohio	24.89
Delivered Mansfield, Ohio	25.44
F.o.b. Birmingham	19.00

#### Bessemer

F.o.b. Everett, Mass.	26.75
F.o.b. Bethlehem, Birdsboro and Swedeland, Pa.	26.00
Delivered Boston Switching District	26.50
Delivered Newark or Jersey City	27.53
Delivered Philadelphia	26.76
F.o.b. Buffalo and Erie, Pa., and Duluth	25.00
F.o.b. Neville Island and Sharpsville, Pa.; Youngstown, Cleveland, Toledo and Hamilton, Ohio; Detroit; Chicago.	24.50
F.o.b. Birmingham	25.61
Delivered Cincinnati	25.89
Delivered Canton, Ohio	26.44
Delivered Mansfield, Ohio	26.44

#### Low Phosphorus

Basing points: Birdsboro, Pa., Steelton, Pa., and Standish, N. Y.	\$28.50
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#### Gray Forge

Valley or Pittsburgh furnace	\$23.50
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#### Charcoal

Lake Superior furnace	\$27.00
Delivered Chicago	30.34

#### Canadian Pig Iron

##### Per Gross Ton

Delivered Toronto	
No. 1 fdy., sil. 2.25 to 2.75	\$26.50
No. 2 fdy., sil. 1.75 to 2.25	25.50
Malleable	26.00
Basic	25.50

##### Delivered Montreal

No. 1 fdy., sil. 2.25 to 2.75	\$27.50
No. 2 fdy., sil. 1.75 to 2.25	27.00
Malleable	27.50
Basic	27.00

### FERROALLOYS

#### Ferromanganese

F.o.b. New York, Philadelphia, Baltimore, Mobile or New Orleans.	
Per Gross Ton	
Domestic, 80% (carload)	\$102.50

#### Spiegeleisen

Per Gross Ton Furnace	
Domestic 19 to 21%	\$33.00
F.o.b. New Orleans	33.00

#### Electric Ferrosilicon

Per Gross Ton Delivered; Lump Size	
50% (carload lots, bulk)	\$69.50*
50% (ton lots in 50 gal. bbl.)	80.50*
75% (carload lots, bulk)	126.00*
75% (ton lots in 50 gal. bbl.)	139.00*

#### Bessemer Ferrosilicon

F.o.b. Furnace, Jackson, Ohio	
Per Gross Ton	
10.00 to 10.50%	\$33.50
For each additional 0.50% silicon up to 17%.	
50c. per ton is added.	
Manganese 2 to 3%, \$1 per ton additional.	
For each unit of manganese over 3%, \$1 per ton additional.	
Phosphorus 0.75% or over, \$1 per ton additional.	
Base prices at Buffalo are \$1.25 a ton higher than at Jackson.	

#### Silvery Iron

Per Gross Ton	
F.o.b. Jackson, Ohio, 5.00 to 5.50%	\$27.50
For each additional 0.5% silicon up to 17%.	
50c. a ton is added.	
The lower all-rail delivered price from Jackson or Buffalo is quoted with freight allowed.	
Base prices at Buffalo are \$1.25 a ton higher than at Jackson.	
Manganese, each unit over 2%, \$1 a ton additional.	
Phosphorus 0.75% or over, \$1 a ton additional.	

#### Ferrocchrome

Per lb. Contained Cr., Delivered Carlots, Lump Size, on Contract	
4 to 6% carbon	\$10.50c.*
2% carbon	16.50c.*
1% carbon	17.50c.*
0.10% carbon	19.50c.*
0.06% carbon	20.00c.*

#### Silico-manganese

Per Gross Ton, Delivered, Lump Size, Bulk, on Contract	
3% carbon	\$101.50*
2.50% carbon	106.50*
2% carbon	111.50*
1% carbon	121.50*

#### Other Ferroalloys

Ferrotungsten, per lb. contained W del., carloads, nominally	\$2.00
Ferrotungsten, lots of 500 lbs., nominally	2.05
Ferrotungsten, smaller lots, nominally	2.10
Ferrovanadium, contract, per lb. contained V., delivered	\$2.70 to \$2.90†
Ferrocolumbium, per lb. contained columbium, f.o.b. Niagara Falls, N. Y., tons lots.	\$2.25†
Ferrocobaltitanium, 15 to 18% Ti, 7 to 8% C, f.o.b. furnace carload and contract per net ton	\$142.50
Ferrocobaltitanium, 17 to 20% Ti, 3 to 5% C, f.o.b. furnace, carload and contract, per net ton	\$157.50
Ferrophosphorus, electric or blast furnace material, in carloads, f.o.b. Anniston, Ala., for 18%, with \$3 unitage, freight equalized with Rockdale, Tenn., per gross ton	\$58.50
Ferrophosphorus, electrolytic, 23-26% in car lots, f.o.b. Monsanto (Siglo), Tenn., 24%, per gross ton, \$3 unitage, freight equalized with Nashville	\$75.00
Ferromolybdenum, per lb. Mo. f.o.b. furnace	95c.
Calcium molybdate, per lb. Mo. f.o.b. furnace	80c.

\*Spot prices are \$5 per ton higher.  
†Spot prices are 10c. per lb. of contained element higher.

### ORES

#### Lake Superior Ores

Delivered Lower Lake Ports	
Per Gross Ton	
Old range, Bessemer, 51.50%	\$3.25
Old range, non-Bessemer, 51.50%	5.10
Mesabi, Bessemer, 51.50%	5.10
Mesabi, non-Bessemer, 51.50%	4.95
High phosphorus, 51.50%	4.85

#### Foreign Ore

C.i.f. Philadelphia or Baltimore	
Per Unit	
Iron, low phos., copper free, 55 to 58% dry, Algeria, nominal	17.00c.
Iron, low phos., Swedish, average, 68½% iron Nominally	17 to 18c.
Iron, basic or foundry, Swedish, aver. 65% iron Nominally	15c.
Iron, basic or foundry, Russian, aver. 65% iron	Nominal
Man., Caucasian, washed 52%	45c.
Man., African, Indian. 44-48%	40c.
Man., African, Indian, 49-51%	Nominal
Man., Brazilian, 46 to 48½%	Nominally 40c.
Per Short Ton Unit	
Tungsten, Chinese, Wolframite, duty paid, delivered	\$19.00
Tungsten, domestic, scheelite delivered	\$16.00 to \$19.00
Chrome ore (lump) c.i.f. Atlantic Seaboard, per gross ton: South African (low grade)	\$16.00
Rhodesian, 45%	22.00
Rhodesian, 48%	25.50
Turkish, 48-49%	25.00 to \$26.00
Turkish, 45-46%	23.50 to 24.00
Turkish, 44%	19.00 to 19.50
Chrome concentrates (Turkish) c.i.f. Atlantic Seaboard, per gross ton: 50%	\$25.50 to \$26.50
48-49%	25.50 to 26.00

### FLUORSPAR

Per Net Ton	
Domestic, washed gravel, 85-5, f.o.b. Kentucky and Illinois mines, all rail	\$13.00 to \$19.00
No. 2 lump, 85-5, f.o.b. Kentucky and Illinois mines	20.00
Foreign, 85% calcium fluoride, not over 5% silicon, c.i.f. Atlantic ports, duty paid	24.50
Domestic No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2½% silicon, f.o.b. Illinois and Kentucky mines	31.50

### FUEL OIL

Per Gal.	
F.o.b. Bayonne or Baltimore, No. 3 distillate	4.75c.
F.o.b. Bayonne or Baltimore, No. 4 industrial	4.75c.
Del'd Ch'go, No. 3 industrial	4.15c.
Del'd Ch'go, No. 5 industrial	4.00c.
Del'd Cleve'd, No. 3 distillate	5.75c.
Del'd Cleve'd, No. 4 industrial	5.625c.
Del'd Cleve'd, No. 5 industrial	3.50c.

### COKE

Per Net Ton	
Furnace, f.o.b. Connellsville, Prompt	\$4.00 to \$4.25
Furnace, f.o.b. Connellsville, Prompt	5.00 to 6.25
Foundry, by-product, Chicago ovens	10.25
Foundry, by-product, del'd New England	12.50
Foundry, by-product, del'd Newark or Jersey City	10.88 to 11.40
Foundry, by-product, Philadelphia	10.95
Foundry, by-product, delivered Cleveland	11.05
Foundry, by-product, delivered Cincinnati	10.50
Foundry, Birmingham	7.50
Foundry, by-product, del'd St. Louis industrial district	11.00 to 11.50
Foundry, from Birmingham, f.o.b. cars dock, Pacific ports	14.75

# NIAGARA

BRAND

## FERRO — ALLOYS

*For High Quality Steels*

**FERRO SILICON**  
ALL GRADES

**FERRO CHROMIUM**  
HIGH CARBON

**FERRO CHROMIUM**  
LOW CARBON

**FERRO MANGANESE**

**SILICO MANGANESE**

# PITTSBURGH METALLURGICAL CO., Inc.

NIAGARA FALLS, N. Y.

Pittsburgh GENERAL SALES OFFICE  
1738 Oliver Bldg.

Chas. F. Colbert, Jr.  
Vice President in Charge of Sales

Cleveland  
New York

BRANCH SALES OFFICES  
Hanna Bldg.  
(Oglebay Norton & Co.)  
30 Church St.  
(Phillips Isham)

# FABRICATED STEEL

*Lettings higher at 16,325 tons as against 8900 tons last week . . . New projects slightly lower at 13,290 tons . . . Plate awards call for 1500 tons.*

## NORTH ATLANTIC STATES

### AWARDS

- 2800 Tons, Hancock, Md., Potomac River bridge, to Bethlehem Steel Co., Bethlehem, Pa.
- 2100 Tons, New York, seaplane hangar, North Beach, to American Bridge Co.
- 910 Tons, New York, post office alterations Grand Central annex, to Taylor-Fichter Steel Construction Co., New York.
- 700 Tons, Weehawken, N. J., Lincoln Tunnel, to Bethlehem Steel Co., Bethlehem, Pa.
- 480 Tons, Morristown, N. J., armory, to Lehigh Structural Steel Co., Allentown, Pa.
- 460 Tons, Queens, N. Y., school No. 15, to Bethlehem Fabricators, Inc., Bethlehem, Pa.
- 415 Tons, Brooklyn, school No. 95, to Dreier Structural Steel Co., New York.
- 370 Tons, Hartford, Conn., Y.M.C.A. building, to Bethlehem Fabricators, Inc., Bethlehem, Pa.
- 260 Tons, New York, du Pont building at World's Fair, to Ingalls Iron Works Co., Birmingham.
- 225 Tons, New York, Glass Industries building at World's Fair, to Belmont Iron Works, Philadelphia.
- 215 Tons, Washington, store building, to Virginia Bridge Co., Roanoke, Va.
- 200 Tons, Springfield, Mass., Westinghouse Electric & Mfg. Co. warehouse, to Bethlehem Steel Co.
- 190 Tons, New Haven, Conn., alterations to power house, National Folding Box Co., to Berlin Construction Co., Berlin, Conn.
- 170 Tons, Ashley, Pa., addition to coal breaker, Glen Alden Coal Co., to Anthracite Bridge Co., Scranton, Pa.
- 165 Tons, Orange, N. J., Bilhuber-Knoll plant, to Belmont Iron Works, Philadelphia.
- 125 Tons, Baltimore, Procter & Gamble warehouse, to Belmont Iron Works, Philadelphia.
- 120 Tons, New York, building, Kansas City Packing Co., to an unnamed bidder.
- 115 Tons, Wassaic, N. Y., assembly hall, to Belmont Iron Works, Philadelphia.
- 115 Tons, Mather, Pa., coal tippie, to Lackawanna Steel Construction Corp., Buffalo.
- 100 Tons, Cambridge, Mass., Harvard University squash court, to Morrison-Stevens Co., Boston.

### THE SOUTH

- 525 Tons, Chatham County, Ga., bridge, to Virginia Bridge Co., Roanoke, Va.

- 340 Tons, LaGrange, Ky., administration and hospital buildings and cell blocks, Oldham Prison, to Bethlehem Steel Co., Bethlehem, Pa.

- 235 Tons, New Orleans, Nurses' Home, Charity Hospital, to Jones & Laughlin Steel Corp., Pittsburgh.

- 180 Tons, Memphis, Tenn., 27 steel towers for Miller Electric Co., to Tulsa Boiler Works, Tulsa, Okla.

- 180 Tons, Ketchum, Okla., railroad-highway bridge, to American Bridge Co., Pittsburgh.

- 125 Tons, Lancaster - Chesterfield Counties, S. C., bridge, to Columbia Steel Co., San Francisco.

### CENTRAL STATES

- 890 Tons, Chicago, Torrence Avenue bridge, to Mississippi Valley Structural Steel Co., St. Louis.

- 550 Tons, Madison, Wis., Memorial Union addition, University of Wisconsin, to R. C. Mahon Co., Detroit.

- 290 Tons, Fargo, N. D., State undercrossing, Tenth Street, to Bethlehem Steel Co., Bethlehem, Pa.

- 265 Tons, Chicago, subway at Grand Avenue, to Mississippi Valley Structural Steel Co., St. Louis.

- 195 Tons, Chicago, Northwestern Yeast Co. building, to Wendnagel & Co., Chicago.

- 190 Tons, Crawford County, Iowa, bridge, to Pittsburgh-Des Moines Steel Co., Pittsburgh.

- 130 Tons, Chicago, bus storage building, Chicago Surface Lines, to American Bridge Co.

- 130 Tons, Chicago, housing project, Syndicate Temporary, to United Iron & Wire Co., Chicago.

### THE SOUTH

- 1500 Tons, Petersburg, Va., building for Johns-Manville Co., to Belmont Iron Works.

- 500 Tons, Panama, Fla., Trout River bridge, Seaboard Air Line Railway.

- 450 Tons, Chickamauga, Ala., intake gate rail support towers, T.V.A.

- 400 Tons, Chickamauga, Ala., gates and bulkheads, T.V.A.

- 250 Tons, Hobbs Island, Ala., bridge.

- 245 Tons, Coleman, Tex., bridge.

### CENTRAL STATES

- 1200 Tons, Lacon, Ill., bridge, Illinois Steel Bridge Co., Jacksonville, Ill., low bidder.

- 300 Tons, Deerfield, Wis., hockey rink.

- 235 Tons, Saint Jacob, Ill., bridge.

- 100 Tons, Detroit, Northwest postal station, bids in.

### WESTERN STATES

- 230 Tons, San Francisco, 70-lb. girders for municipal railway.

- 210 Tons, Farley, N. M., State bridge FAS-58-A.

### FABRICATED PLATES

#### AWARDS

- 1500 Tons, Jamshedpur, India, plates and shapes, blast furnace for Tata Iron & Steel Co., to W. B. Pollock Co., Youngstown, through H. A. Brassert & Co.

### SHEET PILING

#### NEW PROJECTS

- 810 Tons, Cleveland, H-piling and 275 tons sheet piling for Main Street bridge; Lombardo Bros. Construction Co., Cleveland, low bidder.

### WESTERN STATES

Unstated tonnage, Grand Coulee Dam, three table cantilever cranes and enlarging four other cranes, to Bethlehem Steel Co., Seattle, through Colby Steel & Engineering Co., Seattle; \$1,750,000 reported award price.

### CANAL ZONE

- 250 Tons, Albrook Field, hangar, to Pittsburgh-Des Moines Steel Co., Pittsburgh.

### NEW STRUCTURAL STEEL PROJECTS

#### NORTH ATLANTIC STATES

- 3300 Tons, New York, Needle Trades School.
- 1700 Tons, New York, completion New York approach, George Washington bridge, New York Port Authority; bids until May 10.
- 1500 Tons, New York, Federal Government building, World's Fair; George F. Driscoll Co., Brooklyn, low bidder.
- 900 Tons, White Plains, N. Y., addition to White Plains Hospital building.
- 850 Tons, New York, Petroleum Industry building, World's Fair.
- 550 Tons, Buffalo, Cancer Hospital; John W. Cowper Co., low bidder on general contract.
- 510 Tons, Marcus Hook, Pa., and Toledo, Ohio, Sun Oil Co.
- 300 Tons, Washington, warehouse trestle, Woodward & Lathrop.
- 220 Tons, Middlesex, Vt., State bridges.
- 200 Tons, Sayville, N. Y., grade school.
- 200 Tons, Stamford, Conn., Norma-Hoffman Bearings Corp. manufacturing unit.
- 200 Tons, Cuba, N. Y., school building; bids soon.
- 180 Tons, Beaver Falls, Pa., store building, G. C. Murphy Co.
- 180 Tons, Singery, Md., State grade elimination bridge.
- 180 Tons, Wilmington, Del., theater for Old Time Petroleum Co.
- 150 Tons, Hoboken, N. J., Hoboken Land & Improvement Co. building.
- 100 Tons, New York, Christian Science building, World's Fair.



# ...NON-FERROUS...

**Foreign copper prices decline as demand tapers . . . Lead stocks rise 5377 tons in March; deliveries gain 917 tons . . . Smelter sales total 3388 tons.**

NEW YORK, April 26.—Developments abroad, particularly the Rome-London pact, have taken the edge off the bullishness that has characterized foreign activity in the non-ferrous markets in the past month. Copper buying by foreign consumers abroad in the past week, though in smaller quantity than the previous two weeks, still constitutes the bulk of current activity in the red metal market. The foreign price this morning was around 9.90c. per lb.,

c.i.f., usual base ports, as against 10.20c. a week ago. Domestic copper sales in the past week were 5943 tons, or 809 tons below the preceding week's level. The total for the month through Saturday is 17,913 tons. Most of this tonnage represents inter-company sales as independent consumers continue to limit purchases to maturing needs. Domestic quotations are unchanged at 10c. per lb., Connecticut Valley, for electrolytic metal.

## The Week's Prices. Cents Per Pound for Early Delivery

	Apr. 20	Apr. 21	Apr. 22	Apr. 23	Apr. 25	Apr. 26
Electrolytic copper, Conn.*	10.00	10.00	10.00	10.00	10.00	10.00
Lake copper, N. Y.	10.125	10.125	10.125	10.125	10.125	10.125
Straits, tin, spot, New York	38.55	38.375	38.70	38.25	37.75	37.75
Zinc, East St. Louis	4.25	4.25	4.25	4.25	4.25	4.25
Zinc, New York	4.64	4.64	4.64	4.64	4.64	4.64
Lead, St. Louis	4.35	4.35	4.35	4.35	4.35	4.35
Lead, New York	4.50	4.50	4.50	4.50	4.50	4.50

\*Delivered Connecticut Valley; price ¼c. lower delivered in New York.  
Aluminum, virgin, 99 per cent plus 20.00c.-21.00c. a lb., delivered.  
Aluminum No. 12 remelt No. 2 standard, in carloads, 19.00c. to 19.50c. a lb., delivered.  
Nickel, electrolytic, 35c. to 36c. a lb. base refinery, in lots of 2 tons or more.  
Antimony, Asiatic, 15.25c. a lb., prompt, f.o.b., New York.  
Antimony, American, 13.25c. per lb., prompt shipment, New York.  
Quicksilver, \$71.00 to \$72.00 per flask of 76 lb.  
Brass ingots, commercial 85-5-5-5, 10.25c. a lb., less carload, delivered in Middle West ¼c. a lb. is added on orders for less than 40,000 lb.

### From New York Warehouse

#### Delivered Prices, Base per Lb.

Tin, Straits pig	39.75c. to 40.75c.
Tin, bar	41.75c. to 42.75c.
Copper, Lake	11.00c. to 12.00c.
Copper, electrolytic	11.00c. to 12.00c.
Copper, castings	10.50c. to 10.75c.
*Copper sheets, hot-rolled	13.125c.
*High brass sheets	16.375c.
*Seamless brass tubes	19.125c.
*Seamless copper tubes	18.625c.
*Brass rods	12.375c.
Zinc, slabs	6.25c. to 7.25c.
Zinc, sheets (No. 9), casks, 1200 lb. and over	10.75c.
Lead, American pig	5.50c. to 6.50c.
Lead, bar	6.625c. to 7.625c.
Lead, sheets, cut	7.75c.
Antimony, Asiatic	16.00c. to 17.00c.
Alum., virgin, 99 per cent plus	22.50c. to 24.00c.
Alum., No. 1 for remelt-ing, 98 to 99 per cent	19.50c. to 21.00c.
Solder, ½ and ¾	29.00c. to 31.00c.
Babbitt metal, commercial grade	19.00c. to 49.00c.

\*These prices, which are also for delivery from Chicago and Cleveland warehouses, are quoted with 25 per cent allowed off for extras, except copper sheets and brass rods, on which allowance is 40 per cent.

### From Cleveland Warehouse

#### Delivered Prices per Lb.

Tin, Straits pig	42.25c.
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Tin, bar	44.25c.
Copper, Lake	11.00c. to 11.25c.
Copper, electrolytic	11.00c. to 11.25c.
Copper, castings	10.75c.
Zinc, slabs	6.25c. to 6.50c.
Lead, American pig	5.00c. to 5.25c.
Lead, bar	8.25c.
Antimony, Asiatic	18.50c.
Babbitt metal, medium grade	18.00c.
Babbitt metal, high grade	46.25c.
Solder, ½ and ¾	25.00c.

### Old Metals, Per Lb., New York

Buying prices are paid by dealers for miscellaneous lots from smaller accumulators and selling prices are those charged to consumers after the metal has been prepared for their uses. (All prices are nominal.)

	Dealers' Buying Prices	Dealers' Selling Prices
Copper, hvy. crucible	7.75c.	8.50c.
Copper, hvy. and wire	7.00c.	7.50c.
Copper, light and bottoms	6.25c.	6.50c.
Brass, heavy	4.125c.	4.75c.
Brass, light	3.375c.	4.125c.
Hvy. machine composition	6.50c.	7.00c.
No. 1 yel. brass turnings	4.375c.	4.875c.
No. 1 red brass or compos. turnings	6.00c.	6.50c.
Lead, heavy	3.50c.	3.875c.
Cast aluminum	6.50c.	7.75c.
Sheet aluminum	10.50c.	12.00c.
Zinc	2.25c.	3.50c.

## Zinc

Sales of prime Western metal in the past week were 3388 tons, a gain of 412 tons over the preceding week. Shipments at 2636 tons were slightly lower and undelivered contracts at the end of the week amounted to 27,905 tons. The firmness of ore prices and the apparent reluctance on the part of the mine operators to sell supplies at present prices has added strength to the prevailing quotation on the refined metal of 4.64c. per lb., New York.

## Lead

A tapering of sales as the end of the month approached was evident in the market in the past week. The volume of the week's bookings was about 30 per cent below that of the previous week. The week's sales just about cleared up all the metal required for April, and at the present rate of consumption May needs are about 33 per cent covered. Quotations are unchanged at 4.50c. per lb., New York. Deliveries in March were 31,052 tons against 30,135 tons in February and 63,425 tons in March, a year ago. Production in March advanced to 36,436 tons from 34,869 tons in February, and stocks at the end of the month stood at 143,511 tons, the highest level reached since February, 1937, when reserves totaled 156,832 tons.

## Brass and Bronze Ingots

Average prices received by members of the Non-Ferrous Ingot Metal Institute during the 28-day period ended March 18, on 80-10-10 and 85-5-5-5 per cent metal, were 11.806c. and 10.074c. per lb. respectively. These compare with 11.933c. and 10.204c. in the previous period. Deliveries in March at 3305 tons were 549 tons above the February figure. Unfilled orders on April 1 amounted to 10,488 tons against 11,935 tons on March 1.

## Tin

The past week was essentially a repetition of the preceding week wherein the early part of the week was very quiet but on Thursday and Friday substantial tonnages of tin were purchased. Prices during the week advanced to a high of 38.70c. on Friday, then declined to 37.75c., today's quotation on Straits metal, New York.

# THIS WEEK'S MACHINE ...TOOL ACTIVITIES...

*... Sales at Pittsburgh show a gain, but declines are noted in most other sales districts ... Many commitments are being withheld until general conditions improve ... Railroad lists being acted upon.*

## Sales Have Flattened In Cleveland Area

CLEVELAND—From the standpoint of new inquiries, the past week has been dull here and sales have flattened out also, making it doubtful whether the month will exceed March in orders. Northern Ohio plants supplying the automotive industry continue to await definite word concerning the plans for 1939 models. Meanwhile, the aviation industry has supplied some impetus for tool manufacturers here and Government requirements may be helpful in the future. Demand from the oil industry is light. A few tools and presses have been sold to manufacturers of refrigerator cabinets, stoves and ranges, and to the electrical industry.

## Orders Easing Off At Cincinnati

CINCINNATI—The machinery market in this area has bogged down as demand ebbed a trifle further the past week. The zest, heretofore noticeable in business activity, has been displaced by a quiet sort of expectancy. New business was about equal to one-third of market capacity and was so widely spread as to give no indication of trend. One or two automobile manufacturers closed for some new lathe and broaching equipment, but no other industry was outstanding. Factories are curtailing production further with average operations in the neighborhood of about 25 per cent.

## Orders at Pittsburgh On a Higher Level

PITTSBURGH—Inquiries continue in fairly good volume and machine tool orders so far this month are somewhat ahead of those in the corresponding period in March. Whether the recent improvement in machine tool business is indicative of further increases cannot be told at this time. Not a small amount of business on which data have been accumulated since the first of the year is pending, awaiting favorable changes in the general business situation. Reports that the contemplated Kelsey-Hayes Wheel Co. plant at Neville Island near Pittsburgh, has been abandoned are without foundation according to recent

information, but the project is being held up.

## Sales in the East Back to Depression Levels

NEW YORK—Sales of machine tools in the Metropolitan area reached a new low point last week, the lowest in many years. Dealers and factory representatives compare present conditions with those prevailing at the depth of the depression in 1932 and 1933. Some report a more active inquiry, but others on the other hand point out that some proposals, in the advance stage of being closed, are being held up indefinitely. Even those companies that were most active in the purchase of machine tools in the early part of the year appear to be out of the market at present. All eyes are centered on Washington to break the deadlock, which is described as a lack of confidence.

## Company President Explains Details of Business to Workers

MANNING, MAXWELL & MOORE, INC., with plants in Bridgeport, Boston, Muskegon and Jersey City, recently struck a new note in "industrial democracy." The thousand-odd employees heard their president, Robert R. Wason, present a detailed report covering the company's operations during the past year.

With some 60 lantern slides, Mr. Wason went into every phase of the operations of the company. Employees were informed as to just what happened to each penny of every sales dollar received. They were told how much was spent for materials, wages, salaries and profits, and how much of the profits had in turn been reinvested in the plant and equipment.

Passage of the military appropriations bill will also release orders from the arsenals and Navy yards that have been pending for some time.

## Buying Postponed for Lighter Automotive Program

DETROIT—The slight changes contemplated for next year's automobiles indicate that buying activity can be postponed for some time. Many of the minor changes have not been entirely released yet and will not be for some weeks. However, when last-minute changes are pretty well out of the way, there will be some "fill-in" buying of machine tools, it is believed. In addition, replacements offer some prospects for the next few months. Only moderate activity is seen in non-automotive fields, although Norge has a lively program already underway to equip its refrigeration plant.

## Railroad Needs, the Center Of Chicago Activity

CHICAGO—Current buying tendencies are so far in the direction of lots of one or two machines that an industrial list would be a novelty. Only the railroads have issued sizable inquiries lately, and only two of these have been active, the Milwaukee and Santa Fe. The former has closed on a few tools on its list, whereas the Santa Fe is still considering bids. Many retooling programs, especially those under contemplation by manufacturers of small tractors of new types, have been postponed or retarded. Small tool business is holding up fairly well compared with last month.

It was brought out that approximately 84 per cent of the company's income in 1937 came from new products developed by the company since 1932, pointing out in this connection that constant study of the needs of the market, together with the necessary engineering development to adapt products to meet changing needs, had made it possible not only to maintain employment, but also to provide more jobs for more people.

One slide showed that 45 per cent of the company's Bridgeport plant employees are over 40 years old and that 44 per cent had worked for the company over five years. Following this a detailed report for the operations for the past seven years was shown as well as the outlook for the future.

Another innovation in this meeting was the distribution of slips and pencils and the invitation that any and all questions be asked. At the close of the talk, Mr. Watson frankly answered each question.

# New

# INDUSTRIAL LITERATURE

**COLD SAWING MACHINES.**—Porter-McLeod Machine Tool Co., Inc., Hatfield, Mass. Bulletin describing the new 8-in. Higley type 8-in. cold metal sawing machine, featuring compactness and centralized control. Hydraulic as well as mechanical clamping equipment is available. A capacity chart and a listing of convenient accessories are included in the bulletin.

**ANALYTICAL EQUIPMENT.**—Harry W. Dietert Co., 9330 Roselawn Ave., Detroit. Booklet on "Modern Analysis" for production departments. Contains illustrations of the spectrograph, densimeters with projection comparators, micro-pipettes, film dryers, and carbon determinator and sulphur determinators, with prices, sizes and weights.

**PHOTOELECTRIC RELAYS.**—General Electric Co., 1 River Road, Schenectady, N. Y. Folder No. GEA-2516 describes 40 places where photoelectric relays are used to provide simple, efficient control. Folder also includes descriptions of five types of relays and gives relative characteristics of each.

**STEEL DERRICKS.**—American Hoist & Derrick Co., 62 So. Roberts St., St. Paul, Minn. Various types of derricks, including stiffleg, guy, steel erectors, barge, etc., are described in this 24-page booklet. Construction details and general specifications are given.

**ROLLER CHAIN.**—Diamond Chain & Mfg. Co., 502 Kentucky Ave., Indianapolis. Information on the use of roller chain for motor drives and conveyor applications is contained in this bulletin. The engineering section includes data and formulae, much of which have not been previously available. A section of the bulletin is devoted to sprockets.

**LATHE MANUFACTURING.**—Monarch Machine Tool Co., 108 Oak St., Sidney, Ohio. "Let's Take a Look at Monarch," is the title of this large booklet. Illustrated with striking photographs, this publication serves as a trip through the Monarch plant, showing various departments and the equipment used to produce lathes and providing close-ups of various production operations.

**SOLVENT DEGREASING.**—G. S. Blakeslee & Co., Cicero Station, Chicago. Bulletin describing solvent degreasing of metal parts, including a description of the vapor machine, a vapor-spray machine, the immersion machine, dual

vapor control, automatic degreaser, and "Blacosolv" degreasing solvent.

**MATERIALS HANDLING.**—Barrett-Cravens Co., 3252 W. 30th St., Chicago. Scale trucks. Folder featuring lift-truck built in combination with a beam scale. Specifications and diagrammatic drawings are included.

**INSTRUMENTS.**—Lewis Engineering Co., Naugatuck, Conn. Equipment employed by the automobile industry to make temperature test experiments is attractively presented in this catalog. Other sections of the catalog cover pyrometers, resistance thermometers, thermocouples, pyrometers and accessory equipment. Prices of instruments and parts are given.

*Write for this  
literature  
on your  
company's  
letter-head.  
Please mention  
The Iron Age.*

**TURRET LATHES.**—Warner & Swasey Co., 5701 Carnegie Ave., S. E., Cleveland. How to make turret lathes produce more profitably is the subject of this 176-page pocket-sized handbook. In addition to discussing lathe operating problems, this handbook describes 596 turret lathe tools, some of which have never been previously available as a standard tool.

**NEEDLE BEARINGS.**—Torrington Co., 59 Field St., Torrington, Conn. A discussion on the design, lubrication, capacities and use of needle bearings is contained in this publication. Specifications, tolerances and prices are included.

**DUST CONTROL.**—Pangborn Corp., P.O. Box 857, Hagerstown, Md. This bulletin dramatically portrays the damage

caused by uncontrolled dust. How this dust may be controlled is discussed and photographs of various installations of dust control equipment are included.

**CERTIFIED STEELS.**—Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago. A handy pocket-size book which gives complete listings and descriptions of the certified steels and allied products carried in stock by the company has been recently issued. Included in this book are handy reference tables, weight charts and standard specification listings.

**MONEL PUMP EQUIPMENT.**—International Nickel Co., Inc., 67 Wall St., New York. Case studies of various applications of monel metal gaskets, valve trim and pump parts are presented in this bulletin. The life of monel metal parts is compared with regular steel parts and a non-technical explanation of the claimed superiority of monel for such jobs is given.

**FIREBRICK COSTS.**—George F. Pettinos, Inc., 1206 Locust St., Philadelphia. The manner in which Sonitop "2900", a high temperature refractory cement, provides a better bond than ordinary fireclay in firebrick installations, and through this characteristic reducing firebrick costs, is discussed in detail in this bulletin.

**WROUGHT IRON PIPING.**—A. M. Byers Co., Clark Bldg., Pittsburgh. This bulletin discusses pipe materials, costs, pipe selection, water supply, heating and power systems, installation procedure and why some metals resist corrosion better than others. The bulletin contains 40 pages, many of which are illustrated with typical wrought iron pipe installations.

**GRINDERS.**—Cincinnati Grinders, Inc., Columbia Rd. & South St., Cincinnati. Cincinnati 6 and 10 in. plain hydraulic grinders are covered by this attractive catalog. Pertinent data relative to the construction, operation and capacities of these machines are presented in an easily comprehended manner.

**PRESSES.**—Verson Allsteel Press Co., 9303 So. Kenwood St., Chicago. Single and double action presses, forging and hydraulic presses, die cushions and clutches are described in this bulletin. These machines are constructed of rolled steel plate which is claimed to give unusual rigidity.



# PLANT EXPANSION AND EQUIPMENT BUYING

## ◀ NORTH ATLANTIC ▶

**Mutual-Sunset Lamp Mfg. Co.**, Empire State Building, New York, manufacturer of electric lighting fixtures, parts, etc., has acquired about seven acres in North Brunswick Township, near New Brunswick, N. J., as site for new plant. Main unit will be one-story, 200 x 300 ft. About 400 persons will be employed. Present works at 360 Furman Street, Brooklyn, will be removed to new location. Cost close to \$100,000 with equipment.

**Superintendent of Lighthouses**, St. George, Staten Island, New York, asks bids until May 3 for four centrifugal, geared-type circulating water pumps for oil engines (Circular 56508).

**H. C. Oswald Supply Co.**, 151 East 128th Street, New York, steam and hot water boilers and allied equipment, has leased a two-story building, 100 x 140 ft., at 1988-94 Park Avenue, and will improve for new storage and distributing plant.

**Johns-Manville Corp.**, 22 East Fortieth Street, New York, building and roofing products, insulating materials, etc., has acquired about 140 acres near Jarratt, Va., and will use part of property for mill for production of insulating board products, for which contract has been let to Stone & Webster Engineering Corp., 49 Federal Street, Boston. It will include power house, machine shop and other mechanical departments, with facilities for employment of over 300 persons. Cost about \$1,000,000 with machinery. Company also will establish a townsite at new location, including housing development for mill operatives.

**Quartermaster**, West Point, N. Y., asks bids until May 5 for four magazine feed hot water boilers (Circular 1052-126).

**Sweet Life Food Corp.**, 135 Kent Avenue, Brooklyn, wholesale food products, plans extensions and improvements in multi-story storage and distributing plant at Wythe Avenue and South First Street. Cost close to \$50,000 with equipment. A. W. Lederer is company architect.

**United States Tobacco Co.**, 630 Fifth Avenue, New York, plans new multi-story plant on Petersburg Pike, Richmond, Va., supplementing present plant on Nineteenth Street. Cost over \$2,000,000 with air-conditioning system, conveying, elevating and other mechanical-handling equipment.

**Board of Education**, 500 Fifth Avenue, New York, plans new aircraft and aviation school at North Beach airport, North Beach, L. I., to be used as annex to Manhattan High School of Aviation Trades. Cost close to \$200,000 with equipment. W. C. Martin, Flatbush Avenue Extension and Concord Street, Brooklyn, is architect.

**Port of New York Authority**, 111 Eighth Avenue, New York, Frank C. Ferguson, chairman, asks bids until May 10 for electrical equipment and installation in new Lincoln tunnel, New Jersey approach (Contract MHT-29).

**Commanding Officer**, Ordnance Department, Picatinny Arsenal, Dover, N. J., asks bids until May 4 for one marking machine (Circular 882); until May 13 for 42,500 bronze thumb nuts and 42,500 bronze screw hooks (Circular 866).

**Bendix Aviation Corp.**, 105 West Adams Street, Chicago, has disposed of bond issue of \$5,000,000, about \$2,000,000 of which will be used for completion of new plant at Bendix (formerly Teterboro, N. J.) and installation of equipment. Company will remove plants of two subsidiaries to new location, comprising Eclipse Machine Co., Elmira, N. Y., manufacturer of coaster breaks and

allied equipment, and Pioneer Instrument Co., Brooklyn, manufacturer of aircraft instruments and parts. Plant is scheduled for completion by close of 1938. It will represent a total investment of about \$3,000,000.

**Quartermaster Depot**, Twenty-first and Johnston Streets, Philadelphia, asks bids until May 4 for rigid steel conduit, lead-covered cable, outlet boxes, transformers, switches and other equipment (Circular 669-249); until May 2, galvanized elbows, gutter hangers, gutter circles, etc. (Circular 669-248).

**Supply Officer**, Naval Aircraft Factory, Navy Yard, Philadelphia, asks bids until May 4 for aluminum alloy wire and aluminum alloy rivet wire (Aero Reg. 1059).

**Commanding Officer**, Ordnance Department, Frankford Arsenal, Philadelphia, asks bids until May 4 for one four-spindle lens polishing machine (Circular 934); until May 3, modernizing and motorizing three lathes (Circular 931).

## ◀ BUFFALO DISTRICT ▶

**Electric City Paper Mills, Inc.**, 25 Adams Street, Niagara Falls, N. Y., manufacturer of roofing papers and kindred stocks, plans rebuilding part of mill recently destroyed by fire. Loss close to \$40,000 with equipment.

**Automatic Voting Machine Corp.**, Jones Avenue, Jamestown, N. Y., has let general contract to Haas Construction Co., 1001 Monroe Street, for one-story addition. Cost over \$40,000 with equipment. Beck & Tinkham, Bailey Building, are architects.

## ◀ NEW ENGLAND ▶

**Commanding Officer**, Ordnance Department, Springfield Armory, Springfield, Mass., asks bids until May 2 for milling cutters, thread milling hobs, broaches, reamers, shell mills and end mills (Circular 214); until May 3, 9200 ft. of seamless steel cold drawn tubing (Circular 217); until May 5, one motorized speed head, complete with hand-operated collet chuck and short base suitable for mounting on work bench (Circular 206), three vertical, four-spindle drill presses, hand-feed (Circular 207).

**Hollingsworth & Whitney Co.**, 140 Federal Street, Boston, manufacturer of bond and other writing papers, etc., with three mills in Maine, has arranged 99-year lease of tract at Alabama State Docks, Mobile, Ala., for new kraft pulp and paper mill. It will include power house, machine shop and other mechanical departments, and give employment to about 1000 operatives. Cost close to \$5,000,000 with machinery.

**Bureau of Supplies and Accounts**, Navy Department, Washington, asks bids until May 3 for one motor-driven watchmaker's lathe (Schedule 3375), one motor-driven milling machine (Schedule 3376) for Boston Navy Yard.

**Silex Co.**, Hartford, Conn., manufacturer of coffee percolators, etc., has acquired former local two-story plant of Wiley, Bickford Co., about 20,000 sq. ft. floor space, and will remodel for parts production, with assembling to be carried out at present works.

## ◀ SOUTH ATLANTIC ▶

**City Council**, Augusta, Ga., has let general contract to Calvert Iron Works, 1165 Mickleberry Street, S.W., Atlanta, Ga., for one-story hangar at municipal airport, 120 x 140 ft., with repair and reconditioning division. Cost about \$60,000 with equipment. Brown & Eve, Augusta, are architects; Robert S. Fiske,

Healey Building, Atlanta, is consulting engineer.

**Protect-U-Awning Shutter Co.**, 233 N.W. Twenty-second Street, Miami, Fla., manufacturer of metal awning shutters and frames, has let general contract to Southern Construction Co., 358 N.W. Twenty-ninth Street, for new one and two-story plant, 81 x 275 ft. Cost over \$65,000 with equipment. H. P. Hardin, 358 N.W. Twenty-ninth Street, is engineer.

## ◀ WASHINGTON DIST. ▶

**Purchasing and Contracting Officer**, Holabird Quartermaster Depot, Baltimore, asks bids until May 6 for four electric grinders, two motor-driven iron workers, six electric arc welders and a 110-volt d.c. gas engine welder, four chemical and steam oil-fired electric-driven cleaners, and four degreasing tanks (Circular 398-129); until May 13, one 2-ton portable crane, 140 1½-ton trolley chain hoists, eight 1½-ton chain hoists, 140 superstructure wrecking trucks, 11 warehouse platform trucks (Circular 398-132).

**Quartermaster**, Fort Myer, Va., asks bids until May 11 for two cast iron sectional magazine-type boilers, 880 and 624 sq. ft. steam capacity (Circular 579-15); until May 12, one similar cast iron boiler, 2500 sq. ft. steam capacity (Circular 579-16).

**Board of Regents**, University of Maryland, College Park, Md., has plans for new two-story mechanical shop and service building, for which an appropriation of \$50,562 has been authorized. William F. Stone, 2612 North Charles Street, Baltimore, is architect. Plans will be drawn soon for new mechanical arts, administration and home economics building, for which a fund of \$230,720 has been arranged.

**General Purchasing Officer**, Panama Canal, Washington, asks bids until May 4 for malleable iron galvanized pipe fittings, gate valves, globe valves, twist drills, files, hand taps, cold chisels, 12,960 hacksaw blades, 100 stone drills, machinist's bench vises, expansive bits, wood chisels, cutting punches, crosscut saws, hacksaw frames, hand shovels, one electric welding machine and metal fencing materials, including chain links, posts, arms and gates (Schedule 3349).

**Bureau of Supplies and Accounts**, Navy Department, Washington, asks bids until May 3 for stress relieving furnaces (Schedule 3198), cadmium-plated steel hooks and washers (Schedule 3318), iron wire and cable, copper wire (Schedule 3319), portable electrical instruments, phase rotation indicators, testing generators, storage battery testing outfits (Schedule 3356) for Eastern and Western Navy yards; until May 6, eight main motor-driven condenser cruising condensate pumps and spare parts (Schedule 3365) for Norfolk, Va., yard.

## ◀ SOUTH CENTRAL ▶

**Director of Purchases**, Tennessee Valley Authority, Knoxville, Tenn., asks bids until May 11 for deep-well type unwatering pumping units for Guntersville, Ala., power house and spillway dam junction lock; until May 13 for 161-kv. oil circuit breakers for Chickamauga power station.

**Breaux Bridge Sugar Cooperative, Inc.**, Breaux Bridge, La., has let contract to Farrell-Birmingham Co., Inc., Ansonia, Conn., for new cane sugar mill, with power house, pumping station, machine shop and other mechanical departments. Cost close to \$500,000 with machinery. E. A. Rose, 816 Howard Street, New Orleans, is engineer.

**Continental Oil Co.**, Ponca City, Okla., plans new bulk oil storage and distributing plant at Lafayette, La., including pumping station, three or more steel tanks, each 12,000-gal. capacity, and other equipment. Cost close to \$50,000.

**United States Engineer Office**, Vicksburg, Miss., asks bids until May 3 for one vertical

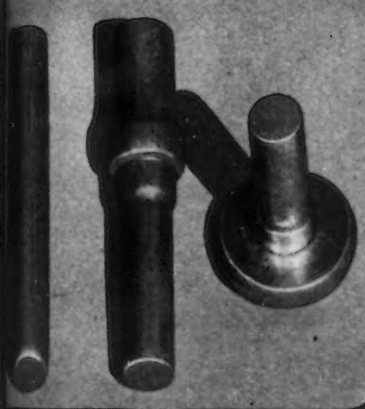


STOCK  
ED FOR  
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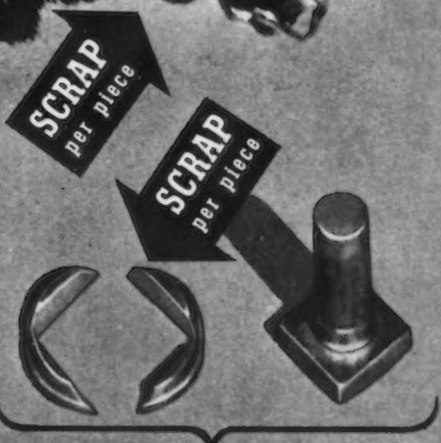


FINISHED  
THREADED  
PIECE

**MONEL METAL 5/16" x 1"  
SQUARE HEAD MACHINE BOLT**  
Weight of 1000 pieces.  
Milled from the Bar . . . 36 lbs.  
Value of Raw Material  
required for 1000 pieces.  
110 lbs. @ 55c . . . \$60.50  
Value of Raw Material  
in 1000 pieces, square  
bar stock basis . . . \$19.80  
Loss of original value of  
raw material resulting  
from scrap as produced  
from 1000 pieces, 74 lbs. \$40.70



CUT OFF AND FORMED IN TWO  
BLOWS ON A COLD HEADER



TRIMMED TO SQUARE HEAD  
ON AUTOMATIC TRIMMER

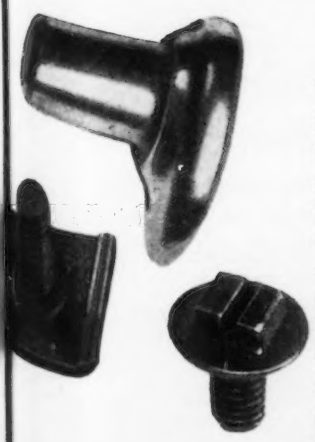


LAST OPERATION.  
THREADING BY  
AUTOMATIC  
ROLL THREADER

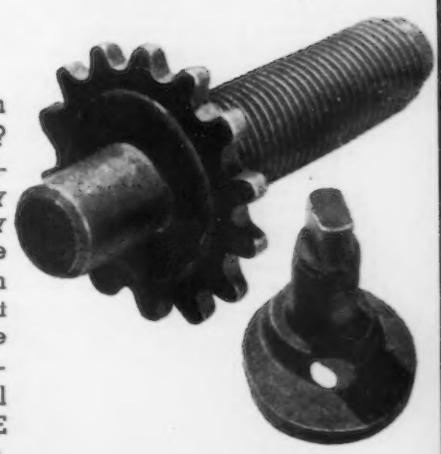
**MONEL METAL 5/16" x 1"  
SQUARE HEAD MACHINE BOLT**  
Weight of 1000 pieces,  
made by Upsetting . . . 36 lbs.  
Value of Raw Material  
required for 1000 pieces,  
47 lbs. of .303" round  
wire @ 49c per lb. . . \$23.03  
Value of Raw Material  
in 1000 pieces, round  
wire stock basis . . . \$17.64  
Loss of original value of  
raw material resulting  
from scrap as produced  
from 1000 pieces, 11 lbs. \$5.39

Saving in cost of raw \$37.47  
material only, upset,  
per 1000 pcs. (about 62%)

NICKEL ALLOY PARTS CAN BE  
*Inexpensive*



Why pay for relatively expensive alloy turnings if a part can be upset—hot or cold—with minimum waste of raw material? Parts which you are now buying or making yourself by milling from the bar often can be made better and cheaper by upsetting. (We have no axe to grind for we manufacture by milling from the bar as well as by upsetting.) We may be able to upset as one integral unit a part which you have been assembling from two or more milled parts. We have done it frequently before and we can do it again. If you use parts made from alloys containing elements such as nickel, copper, chromium, vanadium, aluminum, in production quantities—it will pay you to take advantage of the service we can render. THE LAMSON & SESSIONS CO., General Offices, Cleveland, Ohio.



BOLTS • NUTS • COTTERS • CAP SCREWS

**LAMSON & SESSIONS**



Rush head-type marine boiler (Circular 256).

City Council, Clarksville, Tenn., asks bids until May 17 for electrical distributing system in part of municipality. Cost about \$85,000. This will be initial section of entire system to cost about \$215,000. R. B. Newman, Jr., is engineer.

## ◀ SOUTHWEST ▶

Board of Education, Jefferson City, Mo., plans manual training shops in new two and three-story Simonsen junior high school, for which bids are being asked on general contract until May 9. Cost about \$228,800. Bond issue has been arranged. Felt & Kriehn, 4638 Mill Creek Parkway, Kansas City, Mo., are architects.

Union Electric Co. of Missouri, Twelfth and Locust Streets, St. Louis, has let general contract to Fruin-Colnon Contracting Co., Merchants Laclede Building, for one-story addition to equipment storage and distributing plant on Page Avenue, 55 x 115 ft. Cost over \$60,000 with equipment.

Fones Brothers Hardware Co., 324 East Second Street, Little Rock, Ark., has leased former mill of Dixie Cotton Oil Co., East Third Street North, and will remodel for new storage and distributing plant.

Maritime Oil Co., 2009 Noble Street, Houston, Tex., has approved plans for new oil refinery on Houston ship channel for manufacture of special fuel oils, high-test gasoline, etc. Cost over \$100,000 with equipment. Mid-Continent Engineering Co., First National Bank Building, Dallas, Tex., is engineer.

Butler Mfg. Co., 7400 East Thirteenth Street, Kansas City, Mo., manufacturer of steel tanks, bins, prefabricated steel sectional buildings, etc., has leased about 10,000 sq. ft. in building at Leeland and Rice Streets, Houston, Tex., for new factory branch, storage and distributing plant.

## ◀ WESTERN PA. DIST. ▶

United States Engineer Office, Huntington, W. Va., asks bids until May 9 for one electric motor-driven tow-haulage unit (Circular 124).

Wellsboro Electric Co., Wellsboro, Pa., plans extensions and improvements in steam-electric generating plant, including additional equipment; also extensions in transmission and distributing system. Cost about \$150,000 with equipment.

## ◀ OHIO AND INDIANA ▶

Chef Boiardi Food Products Co., 5200 Harvard Avenue, Cleveland, manufacturer of canned food specialties, has acquired former plant of Susquehanna Silk Mills, Milton, Pa., and will modernize for new processing and canning plant. Cost over \$75,000 with equipment.

Shellmar Products Co., 224 South Michigan Avenue, Chicago, manufacturer of cellophane products, has approved plans for one-story addition to converting plant at Mount Vernon, Ohio, 100 x 200 ft. Cost over \$80,000 with equipment.

Contracting Officer, Materiel Division, Air Corps, Wright Field, Dayton, Ohio, asks bids until May 2 for 45,000 ft. of flexible conduit (Circular 882); until May 3, 500,000 ft. of aircraft power and lighting cable, and 45,000 ft. of rubber insulated wire (Circular 884); until May 10, 700 to 1200 clock assemblies (Circular 897); until May 11, 36 heavy-duty tractors (Circular 878); until May 16, 250 to 500 indicator assemblies, and 250 to 500 generator assemblies (Circular 898), 400 to 800 suction-type gage assemblies, 300 to 600 landing gear, pressure-type gage assemblies, and 400 to 800 manifold pressure-type gage assemblies (Circular 899).

City Council, Goshen, Ind., has acquired about 280 acres near city limits for new municipal airport, to include hangars with

repair and reconditioning departments, high-powered radio range and broadcasting station with five steel towers, 125 to 150 ft. high, and other structures. Cost about \$150,000.

Fisher Brass Co., Inc., Marysville, Ohio, is building an addition to its factory preparatory to installation of about \$29,000 worth of tubular manufacturing and chrome plating equipment.

Libbey Glass Co., Toledo, Ohio, states that the item appearing in The Iron Age of April 7 issue, on page 118-B, that it will build a one-story addition to cost \$500,000 with machinery, is incorrect. Company has in course of construction a four-story building which will be completed about June 1.

## ◀ MICHIGAN DISTRICT ▶

Frankenmuth Brewing Co., Frankenmuth, Mich., plans four-story addition, 60 x 100 ft., for expansion in fermenting, racking cellar, storage and distributing, and other departments. Cost about \$180,000 with equipment.

American Seating Co., Grand Rapids, Mich., metal frame seating equipment for schools, theaters, etc., has let general contract to Owens, Ames & Kimball Co., Grand Rapids, for one-story addition. Cost over \$45,000 with equipment. Osgood & Osgood, Grand Rapids, are architects.

Tri-County Electric Cooperative, Inc., Eaton Rapids, Mich., plans new steam-electric generating plant for power supply for rural electric system. Cost about \$75,000 with equipment. Financing has been arranged through Federal aid.

Globe Pattern Works, Inc., Jackson, Mich., metal and other mechanical patterns, has acquired a building at Vandercreek Lake, Mich., and will modernize for new plant for increased capacity.

## ◀ MIDDLE WEST ▶

Chicago Tram-Rail Co., 224 North Clinton Street, Chicago, manufacturer of tramrail conveying systems and other overhead conveying equipment, has leased a one-story building at 2910 Carroll Avenue, about 12,000 sq. ft. of floor space, for new plant for increased capacity.

United States Engineer Office, Rock Island, Ill., asks bids until May 3 for spare parts for lock-gate operating machinery for Mississippi River locks (Circular 278).

Omaha & Council Bluffs Street Railway Co., Union State Bank Building, Omaha, Neb., plans one-story car repair and maintenance shop, with garage and service facilities for motor buses, at Twenty-fifth and Burt Streets. Cost about \$150,000 with equipment. James T. Allan, Brandeis Theater Building, is architect.

City Council, Madison, Minn., plans extensions and improvements in municipal electric power plant, including new generator unit and accessories, water softening equipment and other apparatus. Cost about \$135,000. A bond issue is being arranged in that amount. Perkins & McWayne, Paulton Block, Sioux Falls, S. D., are consulting engineers.

Bureau of Reclamation, Denver, asks bids until May 4 for one ditch-cleaning and excavating machine of crawler-traction and endless chain, bucket-digging unit type, for use on Belle Fourche, S. D., project (Specifications 1033-D).

Quartermaster, Fort Des Moines, Des Moines, Iowa, asks bids until May 9 for 76 stokers for installation in local buildings (Circular 251-68).

City Council, Grand Island, Neb., plans extensions and improvements in municipal steam-electric power plant, including new boiler unit and auxiliary equipment. Cost about \$50,000. F. S. White is city clerk.

Electro Tool Co., Grand Rapids, Mich., established two years ago to manufacture elec-

tric razors and other fractional horsepower tools, is moving to Racine, Wis., where it has leased second floor of Racine Universal Motor Co. plant on Gould Street.

W. S. Darley & Co., 2810 West Washington Boulevard, Chicago, manufacturers of waterworks and gas plant supplies and equipment, will build a branch factory at Chippewa Falls, Wis., at cost of about \$25,000.

Dunn County Electrical Co-Operative, Menomonie, Wis., has accepted bid of E. W. Wylie & Co., 2239 Highland Parkway, St. Paul, Minn., to build 139 miles of rural electrification lines at \$116,811. M. B. Rotnem is secretary.

Industrial Realty Co., Fort Atkinson, Wis., has engaged Wyeth Allen, consulting engineer, 161 West Wisconsin Avenue, Milwaukee, to supervise construction of \$60,000 factory for occupancy by Moe Bros. Mfg. Co., 319 East Clybourn Street, Milwaukee, manufacturer of domestic and commercial electric fixtures.

Leon Nichols, Rhinelander, Wis., has preliminary plans for new machine shop, 50 x 100 feet.

Frank C. Duchnowski, 2472 South Sixteenth Street, Milwaukee, for many years executive of tool, die and jig manufacturing firms, has organized Paramount Tool & Stamping Co., to engage in similar line of business.

## ◀ PACIFIC COAST ▶

Western Pacific Railroad Co., Mills Building, San Francisco, has let general contract to Fred J. Early, Jr., 369 Pine Street, for one-story shop addition, 150 x 300 ft., at locomotive and car repair shops at Sacramento, Cal., also improvements in present shop units. Cost about \$200,000 with equipment.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until May 6 for one motor-driven punch for Mare Island Navy Yard (Schedule 3334), spare parts for airplanes (Schedules 900-1678 and 900-1696) for San Diego Naval Air Station.

Board of Regents, University of Washington, Seattle, Herbert T. Condon, Education Hall, secretary, will take bids soon for extensions and improvements in power house, including additional equipment. Cost over \$85,000. Lincoln Bouillon, Fourth Avenue Building, is mechanical and electrical engineer.

J. E. Spurlock and L. H. Wahler, 1711 East Sixty-first Street, Los Angeles, will take bids soon on general contract for one-story pipe-fabricating shop, 60 x 100 ft. Cost about \$40,000 with machinery. S. Charles Dearstyne, 4819 Exposition Boulevard, is engineer.

George R. Borman Steel Co., Eighth and Fallon Streets, Oakland, has let general contract to D. W. Nicholson, 357 Twelfth Street, for one-story addition. Cost over \$40,000 with equipment. Will G. Corlett, Bank of America Building, is architect.

Washington Vintners, Inc., Kent, Wash., has purchased building, formerly used as an armory, and will remodel for new winery. Cost about \$85,000 with equipment.

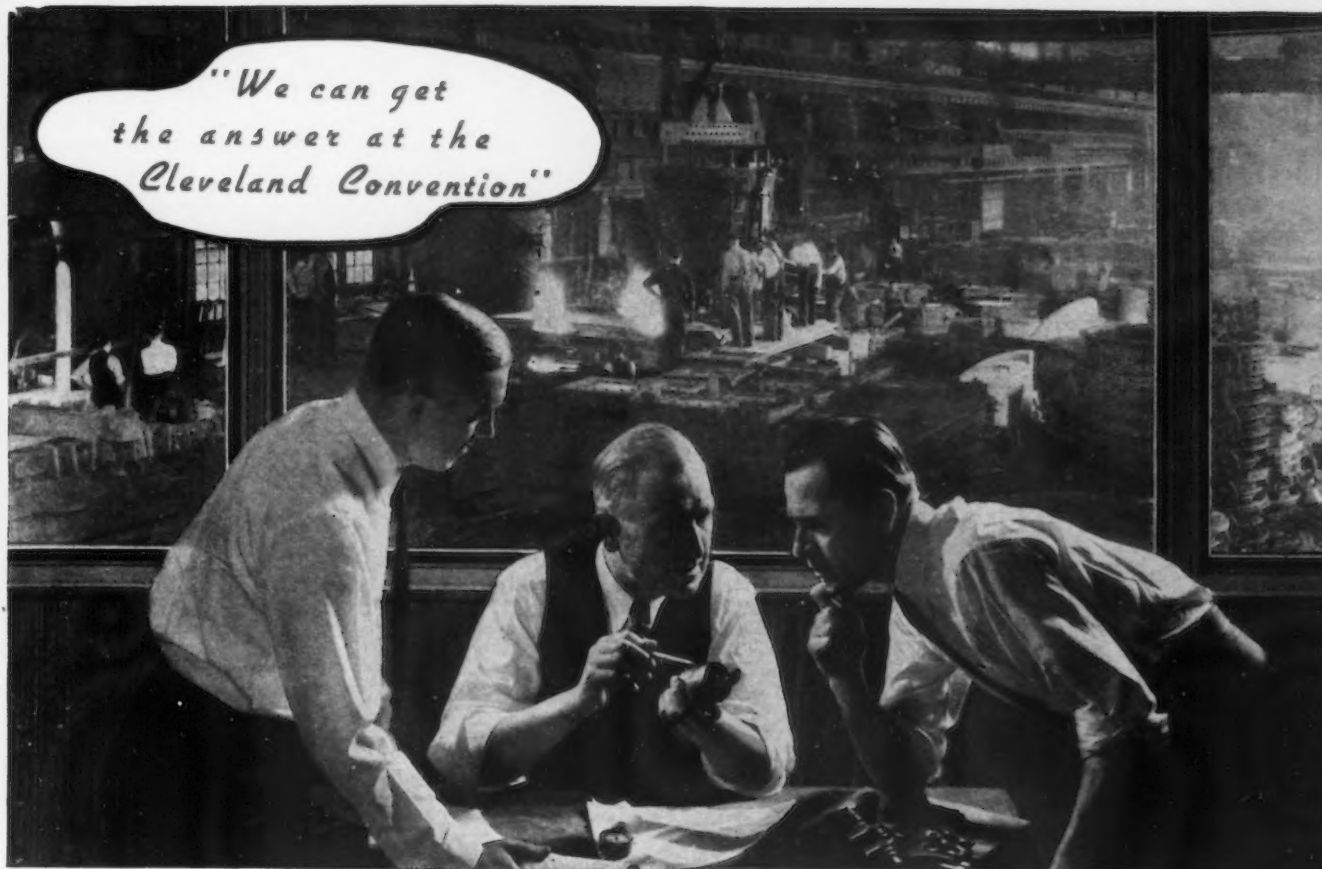
Superintendent of Lighthouses, San Francisco, asks bids until May 10 for steel radio tower at Point Arguello light station.

## ◀ FOREIGN ▶

Swift Canadian Co., Ltd., Winnipeg, Man., a subsidiary of Swift & Co., Union Stock Yards, Chicago, has let general contract to Bird Construction Co., Ltd., Winnipeg, for new plant comprising several one and multi-story units. Cost over \$1,000,000 with equipment.

Brown Corp., Ltd., 71 St. Peter Street, Quebec, has let general contract to Foundation Co., Ltd., 1538 Sherbrooke Street West, Montreal, for one-story addition to pulp and paper mill at La Tuque, Que. Cost about \$140,000 with equipment.





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122 WEST ADAMS STREET, CHICAGO, ILLINOIS

## Their Dutch Is Up

(CONTINUED FROM PAGE 35)

tive government in industry and others but representation is a definite principle rather than a form. The conference therefore prefers the generic term 'Employee Representation.'"

### What Employees Prefer

That the Bethlehem plant employees of Bethlehem Steel also prefer "Employee Representation" to the John L. Lewis brand of unionism was demon-

strated impressively last March when 94.4 per cent out of the 7769 workers eligible to vote cast their ballots in the annual election of representatives under the Plan of Employee Representation.

On the ballot at Bethlehem, as at the Fore River plant election at Quincy, Mass. (See "Mr. Koch Comes To Town," in *THE IRON AGE* of April 21, 1938), appeared a provision by which the voter approved the system as well as the candidate. This said: "The voter by using this ballot approves the holding of the nominations and election as stated in the posted notice issued by the Employees committee on rules under the Plan of Employee Representation at this plant, and expresses his desire that those elected shall represent him in collective bargaining and for the other purposes stated in the notice."

### The Picnic at Waldheim

As the National Labor Relations Board continues its clinic on the Bethlehem variety of collective bargaining, which has given the company a record singularly free of strikes, beer will be found to have played its part.

The town of Bethlehem remembers that the beer affair started out like just another picnic. The Bethlehem employee representatives needed cash to carry on. Lacking the inclination to use the cruder means of dues collection, such as the SWOC collectors' picket lines which have appeared recently to greet workmen at gates of various steel plants, the Bethlehem group finally thought of a picnic.

Bethlehem had seen the collectors' picket line at the main entrance to the Gosztonyi Bank, on Third Street, and seemed to make up its collective mind that the SWOC dues collectors should at least permit the ink on the pay checks to dry before sticking out their long-fingered hands for the \$1 monthly contribution to the CIO-SWOC unionizing campaign.

### Then the Rush Began

Someone thought of beer and when this became unanimous the workers at the head of the Bethlehem plant Plan of Employee Representation went to work in earnest in what the town believes was the biggest of all picnics.

Beethoven Waldheim Park, near Bethlehem, had never seen anything like it and the park attendants are not what you might call unfamiliar with large picnics. Bethlehem is a city which is strong for picnics and when the word went out that 195 half

barrels of beer were lined up for the thirsty, the Employee Representatives picnic was assured of success.

All day long state police raced into Bethlehem to untangle the traffic lines which brought out collective bargaining at its best. At one time a four-mile line of automobiles carrying what the CIO describes as Bethlehem Steel Co.'s "underpaid, under privileged workers" tried to pry itself into the Beethoven Waldheim Park.

### No Room for Singing

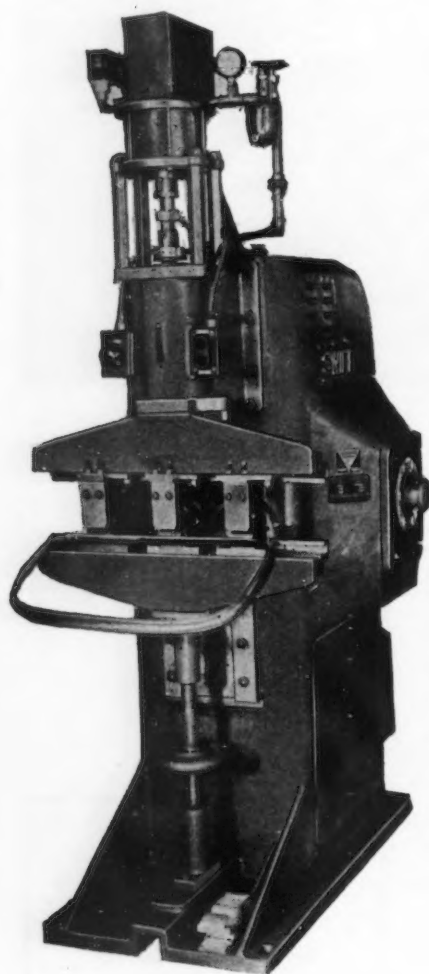
There was little room even for singing by the Bethlehem Maennerchor. There was little room for the automobiles. There was even little room for what those who were there now describe as cold lunch. There was, it seems, plenty of room for beer and practically no space at all for CIO pickets for none were seen.

When the Employees Representatives got around to counting the cash it was found that the till contained more than \$1,500. Since the cost of last month's election in the Bethlehem plant was \$4,735.07, the Bethlehem representatives found themselves very much in the red. They are now in debt a total of \$2,938.37 but have an idea which, they hope, will be even more profitable than the memorable Beethoven Waldheim "putsch."

At the moment the Bethlehem plant ERP is hunting for cash to pay such expenses as \$1 an hour to the 96 tellers who served (unpaid by the company) at the March election.

The Bethlehem Steel management has just billed the ERP for \$51.87 for a list of employees used in determining which workers were entitled to cast ballots at the election and which were not. For hauling ERP ballot boxes to the proper places, the company sent a bill for \$16. And these are only a few of the items which sooner or later must be paid by the employees' representatives.

Will the ERP—which the United States Government through its National War Labor Board set up as an ideal plan of collective bargaining—pay its bills and remain a going concern despite attacks from the outside? The employee representatives themselves say it will and Michael D. Fish, chairman of the ERP, who recently was able to negotiate a 5c. an hr. increase in pay for eight men of his department, looks at the problem in the same way. Mike, who isn't Dutch at all, much less a descendant of the Moravian settlers, says, "sure we'll find the dough to pay those bills. Our Dutch is up, too."



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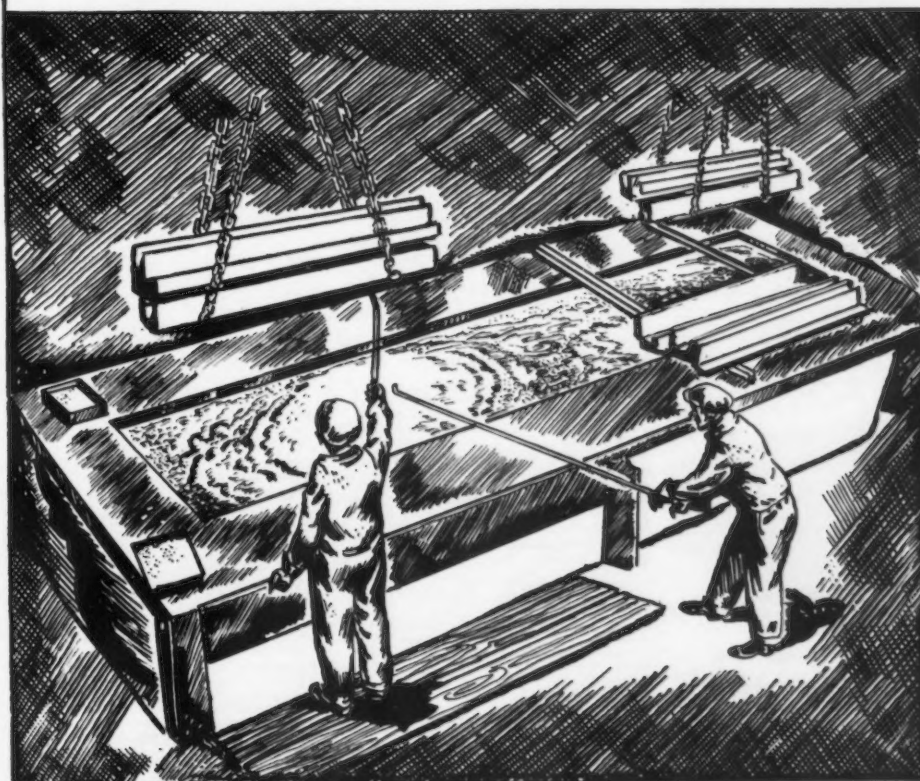
buy, from a recognized source, properly compounded fluxes uniform in quality. In most cases such a procedure reduces fluxing costs as well as improving the quality of work. As a variation in compounding fluxes may cause subsequent defective work it is always safest for the manufacturer to insure the quality of his work by purchasing flux requirements from a recognized source.

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Here you find a weekly listing of hundreds of products with the names and addresses of manufacturers. The advertisements of these companies appear in The Iron Age.

### ABRASIVE WHEELS—See Grinding Wheels

### ABRASIVE CLOTH & PAPER

Norton Co., Worcester, Mass.  
Abrasive—Steel Shot and Grit  
Pangborn Corporation, Hagerstown, Md.

### ACCESSORIES—Welding

Lincoln Electric Co., The, Cleveland.

### ACCUMULATORS—Hydraulic

Baldwin-Southwark Corp., Southwark Div., Philadelphia.

Lake Erie Engineering Corp., 68 Kenmore St., Buffalo, N. Y.

Wood, R. D., & Co., Philadelphia.

### ACETYLENE—Dissolved in Cylinders & Small Tanks

Air Reduction Sales Co., 60 East 42nd St., N. Y. C.

Linde Air Products Company, The, 30 East 42nd St., N. Y. C.

### ACID-PROOF CEMENT

Pennsylvania Salt Mfg. Co., Philadelphia, Pa.

### ACIDS—Pickling

American Chemical Paint Co., Ambler, Pa.

Du Pont de Nemours, E. I., & Co., Inc., Grasseville Chemicals Dept., Wilmington, Del.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa.

### AIR CONDITIONING EQUIPMENT

American Blower Corp., 6000 Russell St., Detroit.

### AIR TANKS AND CYLINDERS

Petroleum Iron Works Co., The, Sharon, Pa.

Scaife, William B., & Sons Co., Pith.

### AIRMETERS & VOLTMETERS

Weston Electrical Instrument Corp., Newark, N. J.

### ALLOYS—Copper

American Brass Co., The, Waterbury, Conn.

### ALLOYS—Ferro

Electro Metallurgical Sales Corp., 30 East 42nd St., N. Y. C.

### ALLOYS—For Die Surfacing

Wilcox-Rich Div. of Eaton Mfg. Co., Detroit.

### ALLOYS—Magnesium

Dow Chemical Co., The, 921 Jefferson Ave., Midland, Mich.

### ALLOYS—Phosphor Bronze

Phosphor Bronze Smelting Co., The, Phila.

### ALLOYS—Titanium

Metal & Alloy Mfg. Co., 120 Broadway, N. Y. C.

Titanium Alloy Mfg. Co., The, Niagara Falls, N. Y.

### ALLOYS—Tungsten

Vanadium Corp. of America, 420 Lexington Ave., N. Y. C.

### ALLOYS—Vanadium

Vanadium Corp. of America, 420 Lexington Ave., N. Y. C.

### ALLOYS—Zinc Base Die Casting

Gardiner Metal Co., 4884 S. Campbell Ave., Chicago.

New Jersey Zinc Co., The, 160 Front St., N. Y. C.

### ALUMINUM

Aluminum Co. of America, Pittsburgh.

Sellman, Arthur, & Co., Inc., 30 Rockefeller Plaza, R. C. A. Bldg., N. Y. C.

### AMMETERS AND VOLTMETERS—Recording

Leeds & Northrup Co., Philadelphia.

### AMMONIA RECOVERY PLANTS

Roppers Co., Pittsburgh.

### ANGLES, BEAMS, CHANNELS AND TEES

Carnegie-Illinois Steel Corp. (U. S. Steel Corp. Subsidiary), Pittsburgh & Chicago.

Columbia Steel Co. (U. S. Steel Corp. Subsidiary), San Francisco, Calif.

Inland Steel Co., Chicago.

Jones & Laughlin Steel Corp., Pittsburgh.

Ryerson, Jos. T., & Son, Inc., Chicago.

Scully Steel Products Co. (U. S. Steel Corp. Subsidiary), Chicago.

Steel & Tubes, Inc., Cleveland.

Tennessee Coal, Iron & Railroad Co. (U. S. Steel Corp. Subsidiary), Birmingham, Ala.

Weirton (W. Va.) Steel Co.

### ANGLES, BEAMS, CHANNELS & TEES

—Magnesium Alloys

Dow Chemical Co., The, 921 Jefferson Ave., Midland, Mich.

### ANNEALING—See Heat Treating

### ANNEALING BOXES

Petroleum Iron Works Co., The, Sharon, Pa.

United Engineering & Fdry. Co., Pith.

### ANNEALING COVERS

Petroleum Iron Works Co., The, Sharon, Pa.

Surface Combustion Corp., 2375 Dorr St., Toledo.

### ANODES—All Types

Du Pont de Nemours, E. I., & Co., Inc., Grasseville Chemicals Dept., Wilmington, Del.

Udylite Co., The, Detroit.

### ANODES—Cadmium

Du Pont de Nemours, E. I., & Co., Inc., Grasseville Chemicals Dept., Wilmington, Del.

### ANODES—Lead

National Lead Co., 111 Bdw., N. Y. C.

### APPAREL—Welding

Lincoln Electric Co., The, Cleveland.

### ARBORS

Cincinnati (Ohio) Milling Mch. Co., The, Morse Twist Drill & Mch. Co., New Bedford, Mass.

### ARMORING MACHINERY—Cable, Wire, Hose

Sleeper & Hartley, Inc., Worcester, Mass.

### ARRESTERS—Spark

Harrington & King Perforating Co., Chicago.

### AXLES—Car or Locomotive

Carnegie-Illinois Steel Corp. (U. S. Steel Corp. Subsidiary), Pittsburgh & Chicago.

### BABBITT METALS

Bunting Brass & Bronze Co., The, Toledo, Ohio.

Cadman, A. W., Mfg. Co., Pittsburgh, Pa.

Cramp Brass & Iron Foundries Co., Philadelphia.

Gardiner Metal Co., 4884 S. Campbell Ave., Chicago.

National Lead Co., 111 Bdw., N. Y. C.

### BALANCING MACHINES—Static Dynamic

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Olsen, Tinius Testing Machine Co., Philadelphia.

### BALING PRESSES—Scrap—See Presses—Baling

### BALLS—Burnishing

Abbott Ball Co., The, 1047 New Britain Ave., Hartford, Conn.

Hartford (Conn.) Steel Ball Co., The, Hartford, Conn.

Abbott Ball Co., The, 1047 New Britain Ave., Hartford, Conn.

Fafnir Bearing Co., New Britain, Conn.

Hartford (Conn.) Steel Ball Co., The, New Departure Div., General Motors Corp., Bristol, Conn.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Strom Steel Ball Co., Cicero, Ill.

### RANDS—Steel

Tennessee Coal, Iron & Railroad Co. (U. S. Steel Corp. Subsidiary), Birmingham, Ala.

### BARRELS—Burnishing

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Hartford (Conn.) Steel Ball Co., The, Hartford, Conn.

Abbott Ball Co., The, 1047 New Britain Ave., Hartford, Conn.

Fafnir Bearing Co., New Britain, Conn.

Hartford (Conn.) Steel Ball Co., The, New Departure Div., General Motors Corp., Bristol, Conn.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Strom Steel Ball Co., Cicero, Ill.

### BARRELS—Tumbling

Baird Mch. Co., The, Bridgeport, Conn.

Hartford (Conn.) Steel Ball Co., The, Whitling Corp., Harvey, Ill.

### BARS—Alloy

Republic Steel Corp., Cleveland, Ohio.

### BARS—Aluminum

Aluminum Co. of America, Pittsburgh.

BARS—Brass, Bronze or Copper

Bunting Brass & Bronze Co., Toledo, Ohio.

Johnson Bronze Co., 505 So. Mill St., New Castle, Pa.

BARS—Cold Drawn

American Steel & Wire Co. (U. S. Steel Corp. Subsidiary), Cleveland.

Bliss & Laughlin, Inc., Harvey, Ill.; Buffalo, N. Y.

Union Drawn Steel Co., Massillon, Ohio.

### BARS—Concrete, Reinforcing

Carnegie-Illinois Steel Corp. (U. S. Steel Corp. Subsidiary), Pittsburgh & Chicago.

Columbia Steel Co. (U. S. Steel Corp. Subsidiary), San Francisco, Calif.

Jones & Laughlin Steel Corp., Pittsburgh.

Laclede Steel Co., St. Louis, Mo.

Tennessee Coal, Iron & Railroad Co. (U. S. Steel Corp. Subsidiary), Birmingham, Ala.

### BARS—Magnesium Alloys

Dow Chemical Co., The, 921 Jefferson Ave., Midland, Mich.

### BARS—Rustless

Rustless Iron & Steel Corp., Baltimore, Md.

### BARS—Steel

Bethlehem (Pa.) Steel Company.

Carnegie-Illinois Steel Corp. (U. S. Steel Corp. Subsidiary), Pittsburgh & Chicago.

Great Lakes Steel Corp., Detroit.

Inland Steel Co., Chicago.

Jones & Laughlin Steel Corp., Pittsburgh.

Republic Steel Corp., Cleveland, Ohio.

Ryerson, Jos. T., & Son, Inc., Chicago.

Scully Steel Products Co. (U. S. Steel Corp. Subsidiary), Chicago.

Steel & Tubes, Inc., Cleveland.

Tennessee Coal, Iron & Railroad Co. (U. S. Steel Corp. Subsidiary), Birmingham, Ala.

Timken Roller Bearing Co., The, Canton, O.

Timken Steel & Tube Div., The Timken Roller Bearing Co., Canton, O.

Weirton (W. Va.) Steel Co.

Youngstown (Ohio) Sheet & Tube Co., The.

### BASKETS—Pickling & Dipping

Cambridge (Md.) Wire Cloth Co.

### BATTERIES—Storage

Electric Storage Battery Co., The, Phila.

USL Battery Corp., Niagara Falls, N. Y.

### BATTERY CHARGERS

Cutler-Hammer, Inc., Milwaukee.

### BEAMS—See Angles, Beams, Channels and Tees

### BEARINGS—Babbitt

Bunting Brass & Bronze Co., The, Toledo, Ohio.

Cadman, A. W., Mfg. Co., Pittsburgh, Pa.

Johnson Bronze Co., 505 So. Mill St., New Castle, Pa.

### BEARINGS—Ball

Bantam Bearings Corp., The, South Bend, Indiana.

Fafnir Bearing Co., New Britain, Conn.

Federal Bearings Co., Inc., The, Poughkeepsie, N. Y.

New Departure Div., General Motors Corp., Bristol, Conn.

Norma-Hoffmann Bearings Corp., Stamford, Conn.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Schatz Mfg. Co., Poughkeepsie, N. Y.

### BEARINGS, Brass and Bronze

Ampco Metal, Inc., Milwaukee, Wis.

Bunting Brass & Bronze Co., Toledo, O.

Johnson Bronze Co., 505 So. Mill St., New Castle, Pa.

National Bearing Metals Corp., Pittsburgh.

### BEARINGS—Oilless

Bunting Brass & Bronze Co., Toledo, O.

Rhoades, R. W., Metalline Co., Inc., Long Island City, N. Y.

Richardson Co., The, Melrose Park, Ill.

### BEARINGS—Quill

Bantam Bearings Corp., The, South Bend, Indiana.

### BEARINGS—Radial

Bantam Bearings Corp., The, South Bend, Indiana.

Fafnir Bearing Co., New Britain, Conn.

Federal Bearings Co., Inc., The, Poughkeepsie, N. Y.

New Departure Div., General Motors Corp., Bristol, Conn.

Norma-Hoffmann Bearings Corp., Stamford, Conn.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Schatz Mfg. Co., The, Poughkeepsie, N. Y.

Shafer Bearing Corp., 35 East Wacker Drive, Chicago.

### BEARINGS—Roll Neck

Bantam Bearings Corp., The, South Bend, Indiana.

Morgan Construction Co., Worcester, Mass.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Shafer Bearing Corp., 35 East Wacker Drive, Chicago.

Timken Roller Bearing Co., The, Canton, O.

### BEARINGS—Roller

Bantam Bearings Corp., The, South Bend, Indiana.

Hyatt Bearings Div., General Motors Corp., Newark, N. J.

Norma-Hoffmann Bearings Corp., Stamford, Conn.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Shafer Bearing Corp., 35 East Wacker Drive, Chicago.

Standard Machinery Co., Providence, R. I.

Timken Roller Bearing Co., The, Canton, O.

### BEARINGS—Roller Tapered

Bantam Bearings Corp., The, South Bend, Indiana.

Timken Roller Bearing Co., The, Canton, O.

### BEARINGS—Rolling Mill Equipment

Bantam Bearings Corp., The, South Bend, Indiana.

Richardson Co., The, Melrose Park, Ill.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Timken Roller Bearing Co., The, Canton, O.

### BEARINGS—Self-aligning Roller

Shafer Bearing Corp., 35 East Wacker Drive, Chicago.

### BEARINGS—Shaft Hanger

Fafnir Bearing Co., New Britain, Conn.

Hyatt Bearings Div., General Motors Corp., Newark, N. J.

Norma-Hoffmann Bearings Corp., Stamford, Conn.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Schatz Mfg. Co., The, Poughkeepsie, N. Y.

Shafer Bearing Corp., 35 East Wacker Drive, Chicago.

Timken Roller Bearing Co., The, Canton, O.

### BEARINGS—Thrust

Bantam Bearings Corp., The, South Bend, Indiana.

Fafnir Bearing Co., New Britain, Conn.

Federal Bearings Co., Inc., The, Poughkeepsie, N. Y.

Hyatt Bearings Div., General Motors Corp., Newark, N. J.

New Departure Div., General Motors Corp., Bristol, Conn.

Norma-Hoffmann Bearings Corp., Stamford, Conn.

SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

Schatz Mfg. Co., The, Poughkeepsie, N. Y.

Shafer Bearing Corp., 35 East Wacker Drive, Chicago.

Timken Roller Bearing Co., The, Canton, O.

### BELT—Conveyor, Elevator

Goodrich, B. F. Co., The, Akron, Ohio.

Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., The, 2 Townsend St., Passaic, N. J.

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Kane & Roach, Inc., Syracuse, N. Y.  
Niagara Machine & Tool Works, Buffalo,  
N. Y.

## BENZOL RECOVERY PLANTS

Koppers Co., Pittsburgh.

## BERYLLIUM COPPER

American Brass Co., The, Waterbury, Conn.

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Rustless Iron & Steel Corp., Baltimore, Md.

## BILLETS—Chrome Steel

Rustless Iron & Steel Corp., Baltimore, Md.

## BILLETS—Forging

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Harrisburg (Pa.) Steel Corp.  
Midvale Co., The, Nicetown, Phila., Pa.  
Republic Steel Corp., Cleveland, Ohio.

## BILLETS—Re-rolling

Alan Wood Steel Co., Conshohocken, Pa.

## BILLETS—Steel

Bethlehem (Pa.) Steel Company.  
Continental Steel Corp., Kokomo, Ind.  
Tennessee Coal, Iron & Railroad Co.  
(U. S. Steel Corp. Subsidiary), Birmingham, Ala.

## BLANKS—Chisel

Cleveland Steel Tool Co., The, 660 E.  
82nd St., Cleveland, Ohio.

## BLANKS—Gear and Pinion

Chicago (Ill.) Rawhide Mfg. Co., The,  
1304 Elston Ave.  
Richardson Co., The, Melrose Park, Ill.

## BLAST CLEANING EQUIPMENT

American Foundry Equipment Co., The,  
401 Byrkit St., Mishawaka, Ind.  
Fangborn Corporation, Hagerstown, Md.

## BLAST FURNACE SPECIALTIES

Balliey, Wm. M., Co., Pittsburgh.

## BLAST FURNACES

Brassett, H. A. & Co., Chicago, Ill.

## BLAST GATES

Rockwell, W. S., Co., 50 Church St., N. Y. C.

## BLOCKS—Chain

Tale & Towne Mfg. Co., The, Phila. Div.,  
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## BLOWERS

American Blower Corp., 6000 Russell St.,  
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## BLOWERS—Rotary & Centrifugal

Koots-Connorsville Blower Corp., Connorsville, Ind.

## BLOWPIPES—Oxy-Acetylene Welding & Cutting

Linde Air Products Company, The, 30 East  
42nd St., N. Y. C.  
Weldit Acetylene Co., Detroit.

## BLOWPIPES—Soldering, Heating, Annealing

American Gas Furnace Co., Elizabeth, N. J.  
Weldit Acetylene Co., Detroit.

## BOILERS

Mumroe R. & Sons Mfg. Corp., Pittsburgh.  
Boilers—Waste Heat  
Babcock & Wilcox Co., The, 85 Liberty  
St., New York City.

## BOILERS—Water Tube

Babcock & Wilcox Co., The, 85 Liberty  
St., New York City.

## BOLT CUTTERS

Acme Machinery Co., Cleveland.  
Landis Mch. Co., Inc., Waynesboro, Pa.

## BOLT AND NUT MACHINERY

Acme Machinery Co., Cleveland.  
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Manville, E. J., Mch. Co., Waterbury, Ct.  
Waterbury (Ct.) Farrel Fdry. & Mch.  
Co., The.

## BOLT & RIVET CLIPPERS

Bremil Mfg. Co., Erie, Pa.  
Helwig Mfg. Co., St. Paul, Minn.

## BOLTS—Carriage and Machine

Cleveland (Ohio) Cap Screw Co., The  
Erie (Pa.) Bolt & Nut Co.  
Oliver Iron & Steel Corp., Pittsburgh.  
Russell, Burdall & Ward Bolt & Nut  
Co., Port Chester, N. Y.

## BOLTS—Special

Erie (Pa.) Bolt & Nut Co.  
Oliver Iron & Steel Corp., Pittsburgh.  
Russell, Burdall & Ward Bolt & Nut  
Co., Port Chester, N. Y.

## BOLTS—Special, Hot or Cold Upset

Oliver Iron & Steel Corp., Pittsburgh.

## BOLTS—Stove, Recessed Head

American Screw Co., Providence, R. I.

## BOLTS—Track

Carnegie-Illinois Steel Corp. (U. S. Steel  
Corp. Subsidiary), Pittsburgh & Chi-  
cago.

## BOLTS AND NUTS

American Screw Co., Providence, R. I.  
Clark Bros. Bolt & Nut Co., Middletown, Conn.  
Erie (Pa.) Bolt & Nut Co.  
Oliver Iron & Steel Corp., Pittsburgh.  
Republic Steel Corp., Cleveland, Ohio.  
Russell, Burdall & Ward Bolt & Nut  
Co., Port Chester, N. Y.

## BOND—Grinding Wheel

Bakelite Corp., 247 Park Ave., N. Y. C.

## BOOTH—Spray

DeVilbiss Co., The, Toledo, Ohio.

## BORING BARS

Bullard Co., The, Bridgeport, Conn.

## BORING, DRILLING & MILLING MACHINES—Horizontal

Hill-Clarke Mchry. Co., 647 W. Washing-  
ton Blvd., Chicago.  
Lucas Machine Tool Co., Cleveland.  
National Automatic Tool Co., Richmond  
Ind.

## BORING & DRILLING MACHINES—Vertical

Baker Bros., Inc., Toledo, Ohio.  
Bullard Co., The, Bridgeport, Conn.

## BORING MACHINES—Diamond

Ex-Cell-O Corp., 1200 Oakman Blvd., De-  
troit.

## BORING MACHINES—Jig

Pratt & Whitney Div. Niles-Bement-Pond  
Co., Hartford, Conn.

## BORING & TURNING MILLS—Vertical

Bullard Co., The, Bridgeport, Conn.  
Cincinnati (Ohio) Planer Co.  
Rogers Machine Wks., Alfred, New York.

## BRAKE LINING AND BLOCKS—Asbestos

Manhattan Rubber Mfg. Div. of Ray-  
bestos-Manhattan, Inc., The, 2 Town-  
send St., Passaic, N. J.

## BRAKES—Electric

Clark Controller Co., The, Cleveland.  
Cutler-Hammer, Inc., Milwaukee.

## BRAKES—Electric & Mechanical

Clark Controller Co., The, Cleveland.  
Electric Controller & Mfg. Co., The,  
Cleveland.

## BRAKES—Magnetic

Stearns Magnetic Mfg. Co., 635 So. 28th  
St., Milwaukee.

## BRAKES—Metal Forming

Cincinnati (Ohio) Shaper Co., The.  
Dreis & Krump Mfg. Co., Chicago.  
Schatz Mfg. Co., The, Poughkeepsie, N. Y.  
Steelweld Machinery Co., Cleveland.

## BRICK—Acid Resisting

Keasler Brick Co., Steubenville, Ohio.

## BRICK—Fire Clay

Carborundum Co., The, Niagara Falls, N. Y.  
Keasler Brick Co., Steubenville, Ohio.

## BRICK—Insulating

Babcock & Wilcox Co., The, 85 Liberty  
St., New York City.

## BRIDGE BUILDERS

American Bridge Co. (U. S. Steel Corp.  
Subsidiary), Pittsburgh.  
Belmont Iron Works, Philadelphia.

## BRIDGE OPERATING MACHINERY—Movable

Earle Gear & Mch. Co., Philadelphia.

## BRIQUETS—Ferrous

Electro Metallurgical Sales Corp., 30 East  
42nd St., N. Y. C.

## BROACHES

Colonial Broach Co., Detroit.  
LaPointe Machine Tool Co., The, Hudson,  
Mass.

## BROACHING MACHINES

Bullard Co., The, Bridgeport, Conn.  
Cincinnati (Ohio) Milling Mch. Co., The,  
Colonial Broach Co., Detroit.  
LaPointe Machine Tool Co., The, Hudson,  
Mass.

Oilgear Co., The, 1311 W. Bruce St., Mil-  
waukee.

## BRONZE FOR DIES

Ameco Metal, Inc., Milwaukee, Wis.

## BRONZE—Phosphor

Bunting Brass & Bronze Co., Toledo, Ohio.  
Phosphor Bronze Smelting Co., The, Phila.

## BUCKETS—Clamshell

Blaw-Knox Co., Pittsburgh.  
Hayward Co., The, 50 Church St., N. Y. C.  
Industrial Brownhoist Corp., Bay City,  
Mich.

## BUCKETS—Electric Motor

Hayward Co., The, 50 Church St., N. Y. C.

## BUCKETS—Orange Peel

Hayward Co., The, 50 Church St., N. Y. C.

## BUFFERS & POLISHING MACHINES

Packer Machine Co., The, Meriden, Conn.

## BUFFING APPLICATORS—Automatic

Packer Machine Co., The, Meriden, Conn.

## BUILDINGS—Steel

American Bridge Co. (U. S. Steel Corp.  
Subsidiary), Pittsburgh.  
Belmont Iron Works, Philadelphia.  
Blaw-Knox Co., Pittsburgh.  
Iron & Steel Products, Inc., Chicago.

## BULLDOZERS

Ajax Mfg. Co., The, Euclid, Ohio.  
Beatty Mch. & Mfg. Co., 936-150th St.,  
Hammond, Ind.

## BULLDOZERS—Hydraulic

Elmes, Chas. F., Engng. Wks., Chicago.

## BURNERS—Oil or Gas

Kemp, C. M., Mfg. Co., The, Baltimore,  
Md.

## BUSHINGS—Bronze

Ameco Metal, Inc., Milwaukee, Wis.  
Bunting Brass & Bronze Co., Toledo, O.  
Johnson Bronze Co., 505 So. Mill St., New  
Castle, Pa.

Phosphor Bronze Smelting Co., The, Phila.  
Shenango-Penn Mold Co., Pittsburgh.



Fig. 1532

Pat. Applied For

They're  
"HALLOWELL"  
TOTE PANS

## —and that's sufficient guarantee of satisfaction for those firms that know and use "HALLOWELL" STEEL EQUIPMENT

Ask many of the firms throughout the country about equipment backed by the name "Hallowell". They'll tell you it's as good as money can buy . . . that's true, and these Tote Pans are no exception. They're made of heavy steel, welded together so they'll take far more punishment and can be packed with heavier loads without going to pieces.

Handles are positively locked in place and can't pull out while the corners of these boxes are reinforced through their distinctive design and manufacture.

"Hallowell" Tote Pans won't get oil soaked, either, as will wooden boxes. All told, you save real money when you invest in "Hallowells".

5 good reasons why you should specify "HALLOWELL" TOTE PANS

1. They stack high—one atop the other.
2. They stack firmly—can't topple over.
3. Handles can't pull loose.
4. They're welded—can't get rickety.
5. They're fireproof.



Fig. 1040

"Hallowell" Steel Bench Drawers  
Can't shrink, swell, stick or jam. Wears far better, lasts much longer than wooden drawers. Has dirt and dust-proof cover, and convenient tray for small precision tools. Get Bulletin.

## STANDARD PRESSED STEEL CO.

### BRANCHES

BOSTON  
DETROIT  
INDIANAPOLIS

### JENKINTOWN, PENNA.

BOX 523

### BRANCHES

CHICAGO  
ST. LOUIS  
SAN FRANCISCO



# JUST BETWEEN US TWO

## A Writer-In Bold Face, Italics

**X**-RAYS are all right for moderate cross-sections, but a specimen like your fireside companion's barrel-chested news editor calls for the super-penetrating powers of gamma rays. Z-z-z-z-z-z-z:

Name: James A. Rowan, M. E. (Cornell).

*Distinguishing characteristic:* A core of idealism barely concealed beneath a thin coat of cynicism, without which a newspaper man, or ex, feels naked.

*Past:* Mill experience, but the call of the typewriter was too strong; worked way up to managing editorship of *Youngstown Telegram*; then labor specialist for *Pittsburgh Press*. Did a few special jobs for Iron Age too well for us to be happy until we owned him body and soul.

Has the uncomfortable philosophy that nothing is as good as it seems to be—and that, given a crack at it, he'll improve it—and he usually does.

As a writer he is a natural. See page 33. His "Mr. Koch Comes to Town" in last week's issue might win the prize for the best trade paper news story of '38, if someone puts up a prize. At the same time it weakens (see page 29 of last week's issue) our right to the claim of being one of the few publications you needn't hide from the kiddies, God bless 'em.



## Trick

**I**F the couple next door insists on playing five-suit bridge and you get to doing puzzles instead, you might try this:

*Tell the subject to write all the digits except 8 in a single line, thus: 12345679. Then ask which is his favorite digit. If, for example, he says 7, tell him to multiply the large number by 63. The answer he gets contains nothing but sevens. If he prefers 1, you tell him to multiply by 9. To get all twos, multiply by 18; for threes, multiply by 27; fours, by 36; and in multiples of 9, so on up to 81.*

## Be Good, Sweet Maid...

**A**CLEVER headline, while a source of satisfaction to the writer, isn't nearly as valuable to the advertiser, or the reader, as a "selling" head, which means a headline which recognizes that trade papers are read for only one thing—profit-making.

The headline which is merely clever may call attention only to itself, but the selling head flags the reader in his search for profit-making ideas and steers him into the text of the ad. Examples:

*Gives You Stainless Protection at 1/2 Usual Basic Material Cost—*  
Ingersoll Steel & Disc  
*Now it takes half the time—fewer screws—and reduces spoilage—*  
American Screw  
*The Lead that strengthens with strain—National Lead*  
*Never before! Automatic Nut Tapping with Straight Shank Taps*  
—Waterbury Farrel Foundry & Machine  
*You are Paying Too Much for Cutting-Off, Unless . . .*  
Armstrong-Blum

## We Dropped Ten Thousand

**Y**OU could call it a miracle if an issue of your favorite journal came out without a single typographical error, for it is pretty big and is handled rapidly. There have been no miracles recently.

The errors are usually harmless, but once in a while an embarrassing one creeps in. Take, for instance, that ad the Adv. Dept. ran a couple of weeks ago. Our superior subscription renewal record for '37 was supposed to be compared with our contemporaries'—5,777 as the best for them, and us with a glittering 10,936. But the 1 got lost in the shuffle, and it appeared as 0,936.

Not that we care. Store teeth with no flaws are worthless. Christopher Morley it was who said, "The little less than perfect, how perfect it is!" And, gosh, how we try!

—A.H.D.

# Products Index

## BUSHINGS—Oilless

Rhoades, H. W. Metaline Co., Inc., Long Island City, N. Y.

## BUSHINGS—Phosphor Bronze

Bunting Brass & Bronze Co., Toledo, Ohio.

Phosphor Bronze Smelting Co., The, Phila.

## BY-PRODUCTS COKE AND GAS OVENS

Koppers Co., Pittsburgh.

## CABLE—Electric

General Electric Co., Schenectady, N. Y.

Lincoln Electric Co., The, Cleveland.

## CABLEWAYS AND TRAMWAYS—See Tramways

## CADMIUM

Du Pont de Nemours, E. I., & Co., Inc.,

Grasselli Chemicals Dept., Wilmington, Del.

Udylite Co., The, Detroit.

## CADMIUM PLATING PROCESS

Du Pont de Nemours, E. I., & Co., Inc.,

Grasselli Chemicals Dept., Wilmington, Del.

## CALCIUM METAL & ALLOYS

Electro Metallurgical Sales Corp., 30 East

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## CARBIC

Linde Air Products Company, The, 30 East

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## CARBIDE

Air Reduction Sales Co., 60 East 42nd

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Linde Air Products Company, The, 30 East

42nd St., N. Y. C.

## CARBIDE—Boron

Norton Co., Worcester, Mass.

## CARBURIZING—See Heat Treating

## CARS—Railway

Iron & Steel Products, Inc., Chicago.

## CARS—Industrial and Mining

Atlas Car & Mfg. Co., The, Cleveland.

## CASE HARDENING—See Heat Treating

## CASTERS—Industrial Truck

Service Caster & Truck Co., Albion, Mich.

## CASTINGS—Acid or Heat Resisting

Ameco Metal, Inc., Milwaukee, Wis.

Cramp Brass & Iron Foundries Co., Phila-

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Duriron Co., Inc., The, 438 N. Findlay

St., Dayton, Ohio.

Hoskins Mfg. Co., Detroit, Mich.

Meehanite Metal Corp., Pittsburgh.

Michiana Products Corp., Michigan City,

Ind.

Midvale Co., The, Nicetown, Phila., Pa.

## CASTINGS—Alloy Iron

Cramp Brass & Iron Foundries Co., Phila-

delphia.

Forging & Casting Corp., The, Ferndale,

Mich.

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Ind.

Western Foundry Co., Chicago.

## CASTINGS—Alloy Steel

Advance Foundry Co., The, Dayton, Ohio

Dodge Steel Co., Philadelphia, Pa.

Hartford (Conn.) Electric Steel Corp.

Mackintosh-Hemphill Co., Pittsburgh.

Michiana Products Corp., Michigan City,

Ind.

Midvale Co., The, Nicetown, Phila., Pa.

## CASTINGS—Aluminum

Aluminum Co. of America, Pittsburgh.

Fairmount Foundry, Inc., Phila., Pa.

## CASTINGS—Brass, Bronze, Copper or Aluminum

Bunting Brass & Bronze Co., The, Toledo,

Ohio.

Cadman, A. W. Mfg. Co., Pittsburgh.

Carbon Malleable Casting Co., Inc., Lan-

caster, Pa.

Cramp Brass & Iron Foundries Co., Phila-

delphia.

National Bearing Metals Corp., Pittsburgh.

Phosphor Bronze Smelting Co., The, Phila.

Snyder, W. P., & Co., Pittsburgh.

Spencer's, I. S. Sons, Inc., Guilford, Ct.

## CASTINGS—Corrosion Resisting

Cramp Brass & Iron Foundries Co., Phila-

delphia.

Meehanite Metal Corp., Pittsburgh.

Michiana Products Corp., Michigan City,

Ind.

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CASTINGS—Die, Aluminum

Aluminum Co. of America, Pittsburgh.

CASTINGS—Electric Steel

Crucible Steel Castings Co., Lansdowne, Pa.

Dodge Steel Co., Philadelphia, Pa.

CASTINGS—Gray Iron

Advance Foundry Co., The, Dayton, Ohio.

American Engineering Co., Philadelphia.

Chambersburg (Pa.) Engineering Co.

Commercial Steel Casting Co., Marlon

Ohio.

Cramp Brass & Iron Foundries Co., Phila-

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Fairmount Foundry, Inc., Phila., Pa.

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Murray Iron Wks. Co., Burlington, Iowa.

National Roll & Fdry. Co., Avonmore, Pa.

North Wales (Pa.) Mach. Co., Inc.

Spencer's, I. S. Sons, Inc., Guilford, Ct.

Western Foundry Co., Chicago.

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Cramp Brass & Iron Foundries Co., Phila-

delphia.

Meehanite Metal Corp., Pittsburgh.

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Malleable Iron Fittings Co., Branford, Ct.

Peoria (Ill.) Malleable Castings Co.

## CASTINGS—Meehanite Metal

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## CASTINGS—Semi-Steel

Cramp Brass & Iron Foundries Co., Phila-

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Malleable Iron Fittings Co., Branford, Ct.

## CASTINGS—Steel

Bethlehem (Pa.) Steel Company.

Birdsboro (Pa.) Steel Foundry & Machine

Co.

Carnegie-Illinois Steel Corp. (U. S. Steel

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cago.

Columbia Steel Co. (U. S. Steel Corp.

Subsidiary), San Francisco, Calif.

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Crucible Steel Castings Co., Lansdowne, Pa.

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Mesta Mch. Co., Pittsburgh.

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Ind.

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Standard Steel Wks. Co., Burnham, Pa.

Strong Steel Foundry Co., Buffalo, N. Y.

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Meehanite Metal Corp., Pittsburgh.

Western Foundry Co., Chicago.

## CEMENT—Acid-Proof

Nukem Products Corp., 68 Niagara St.,

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Pennsylvania Salt Mfg. Co., Philadelphia,

Pa.

## CEMENT—Refractory

Carborundum Co., The, Perth Amboy, N. J.

Johns-Manville Corp., 22 East 40th St.,

New York City.

## CEMENT—Rubber

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United States Rubber Products, Inc., 1799

Broadway, N. Y. C.

## CHAINS—Conveyor & Elevator

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Diamond Chain & Mfg. Co., Indianapolis,

Ind.

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Diamond Chain & Mfg. Co., Indianapolis,

Ind.

Ramsey Chain Co., Inc., Albany, N. Y.

Whitney Chain & Mfg. Co., Hartford, Ct.

## CHAINS—Roller

Baldwin-Duckworth Chain Corp., Spring-

field, Mass.

Diamond Chain & Mfg. Co., Indianapolis,

Ind.

Whitney Chain & Mfg. Co., Hartford, Ct.

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Ramsey Chain Co., Inc., Albany, N. Y.

Whitney Chain & Mfg. Co., Hartford, Ct.

## CHAIRS—Steel, Office

Harter Corp., Sturgis, Mich.

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Cunningham, M. E. Co., Pittsburgh.

Noble & Westbrook Mfg. Co., The, East

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## CHEMICALS—Industrial

Du Pont de Nemours, E. I., & Co., Inc.,

Grasselli Chemicals Dept., Wilmington,

Del.

Pennsylvania Salt Mfg. Co., Philadelphia,

Pa.

## CHEMICALS—Rust Proofing

Parker Rust-Proof Co., 2186 Milwaukee

Ave., Detroit.

Parkin, William M. Co., Pittsburgh.

Udylite Co., The, Detroit.

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Electro Metallurgical Sales Corp., 30 East

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Potter & Johnston Machine Co., Pawtucket,